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ORIGINAL COMMUNICATIONS.

HEPATIC ABSCESS, WITH PRESENTATION OF FOUR CASES.

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[Read before the Chicago Medical Society, August 2.]

Abscess of the liver is in our latitude a disease of extreme rarity as compared with the tropics, where the great majority of cases have been observed and studied.

This, so far as the literature of the subject is concerned, has had the effect of tincturing the writings of our present authorities in temperate latitudes with ideas perhaps applicable in other climes, but certainly, in a measure, false here.

The ascribed causes of abscess of the liver are as numerous as the writers on the subject. But in fact they may be sifted down to quite few classes. I would subdivide them first into,

I.—Intrinsic, or causes resident in the liver itself; and

II.—Extrinsic, or causes external to and independent of the gland.

To the former would belong acute congestions (said to re-

sult from heat and cold), tumors, ecchinococci, biliary calculi, or lumbrici in bile ducts.

To the latter, infective emboli, whether carried through the portal vein or hepatic artery, traumatism, alcoholics in excess, and high temperatures, surgical operations or lesions anywhere in tract of porta vena or its communications.

And here it might be of interest to state that there have been men of recognized ability who claimed that all cases not traumatic were the result of infective emboli. Of these were Frerichs, Budd and Carrington. This, however, was because their cases were ones met with in our zone, which I shall endeavor to prove are of a different type from those seen in India.

We may divide all abscesses of liver into either,

I.—The idiopathic,

II.—The infective or embolic,

III.—The traumatic,

in the order of their frequency, respectively.

I.—Concerning the first variety, I would say that because of ignorance as to the causation they have been termed idiopathic. This variety is met with in the tropics; has become known through the reports of army medical officers, chiefly British, as occurring in military men, and forms the great majority of all reported cases. It is usually single, large, and, according to the opinions of medical officers there stationed (Waring, Macpherson, M'Lean, *et. al.*), to be entirely independent of traumatism or pathological lesion; but they offer no other explanation than "the climate." If I might be allowed to theorize, I would suggest a possible explanation based on the facts that:

(1) it occurs in foreigners more frequently than in natives; (2) in those formerly accustomed to rich animal diet; (3) in the indolent and luxurious rather than in those exercising and of frugal habits; (4) in those of a gouty or rheumatic diathesis.

Now it is true that anything that will decrease very largely the alkalinity of the blood will cause a precipitation of the bile; *i.e.*, the formation of biliary calculi, both in the gall bladder and in the bile ducts. In all probability the nuclei for the cystic calculi originate in the bile ducts and are carried to the bladder, there to increase by concentric deposits. Now just such are the conditions of many of the beef-eating Englishmen, and consequently the formation of biliary calculi in the bile ducts, with occlusion and consequent abscess as a result of the foreign body. In reports of some of the cases examined, the bile ducts have been thus occluded. Such calculi would be more likely to form in such a climate than here. As to this form of hepatic abscess, I can only believe it exceedingly rare in our zone.

By all odds the most frequent abscess with which we meet belongs to the second group of *infective abscesses.*

There being two channels of infection, there are two subclasses of abscesses here.

I.—Per arteriam hepaticum (the pyæmic abscess).

II.—Per portam venam.

The first variety need detain us but a brief time. They result from infective emboli, having escaped detention in the pulmonary plexus, being detained in the hepatic plexus simultaneously with other emboli in other plexuses, more particularly the renal and pulmonary. Such emboli may come from lesions of continuity in any part of the body, most fre-

quently compound fractures. As aseptic surgery increased such cases became fewer and fewer; *i. e.*, pyæmia and pyæmic abscess of the liver are becoming rare.

II.—When we recall the fact that all the blood from the abdominal organs, intestines, colon, stomach, spleen, vermiform appendix and (partly) prostate, etc., is returned to the general circulation by way of the liver, we can readily understand how infective lesions of any of these portal radicals may permit poisonous and infective particles to reach the liver and set up there secondary inflammations.

Hence dysenteries accompanied, as they are, by ulcerations of the intestines, cause quite frequently the trouble under consideration. Indeed, so frequently is hepatic abscess complicated by dysentery that some of our eminent pathologists have sought to find here the causative relation. The four cases which I desire to present for your consideration were all complicated in this manner, and post-mortem examination in two of the cases revealed distinct ulcerations. Numerous other lesions would here suggest themselves, *e.g.*, typhoid ulcerations (Peabody), rectal ulcerations, operations about anus and rectum, and cystotomy.

III.—Thirdly, we have the traumatic abscess, this following injury of some kind to the liver substance, whether from direct or indirect violence. To the former belong cases like the one reported by McLean as following a blow over the liver; or by Otis, in which one followed a sword-thrust, or finally in a class of cases formerly thought to be dependent upon peculiar cerebral lesions from falls on vertex, but which Henry Morris explains as more probably resulting from laceration of liver-tissue by the fall, because of its own weight.

Symptoms.—A word as to the nervous supply of the liver. It, like the lungs, has but very little sensation, being supplied chiefly by sympathetic, left pneumogastric and right phrenic, and so inflammatory processes may go on here without much notice being taken by the patient, just as in the lung huge cavities appear almost without the knowledge, so far as pain is concerned, of the patient. So in the liver the symptoms will vary greatly according as pure liver-tissue or the peritoneum and adjacent organs are affected; *i. e.*, 1°, to the location (in the liver) of the abscess and, 2°, its size; 3°, the other tissues involved, lungs, stomach, pleura, pericardium, 4°, and its causation being of first, second or third classes. When deeply situated and small, there may be no local symptoms whatever, only those of "pus somewhere," chill, fever, sweating, etc., with general malaise, and death result from the "silent abscess" bursting. When larger they will be dependent upon the organ or organs involved in its efforts to find an exit from the body. Pleural or pulmonary and diaphragmatic symptoms if upwards; vomiting, diarrhœa, etc., if into stomach or intestines; swelling, tenderness, and œdema of abdominal wall if by forward perforation. Locally, there is generally a sense of weight, and an uneasiness on jolting, as in metritis. Tenderness and acute pain will depend upon the extent to which the peritoneum is involved. Usually there is some increase in hepatic area, and when this is present some bulging of the side. The temperature is not very high unless the peritoneum is involved considerably, when the constitutional symptoms simulate those of peritonitis. At such times there is present an important symptom, which I find but seldom mentioned in the literature on the subject—I only

recall Flint's passing mention of it, and the one by which I stumbled upon and made the diagnosis in three cases,—I refer to a peritoneal friction-sound, corresponding exactly to that of pleurisy, but far beyond the pleural area. Dr. Peabody emphasizes the fact that there is usually a very marked melancholia existing. The skin is usually of a dirty, muddy appearance, but rarely icteric. Reports of urinalysis of cases state the urine is free from bile-pigment. Inability to lie on the right side may be present.

Sometimes a pain radiates up the back to the right shoulder, and is said to be of diagnostic value.

The *anatomical characters* vary according to location and cause,—in the tropical variety, single and large ; in the infective, smaller and often multiple. The pus said to be at times of a laudable character. In the cases which I examined it was always of a chocolate color, through blood-coloring and liver-detritus, and not offensive. Lining the abscess cavity, or rather floating in its contents, are long, many-branching shreds of vessels, which interfere greatly with efforts at aspiration with a needle. The general law of abscesses holds good, that they open towards the point of least resistance ; and so, if on the superior surface of liver, through the diaphragm into pleura, lung or pericardium ; if below, into the stomach, duodenum or intestine, anteriorly through the abdominal wall and posteriorly between the ribs or into the vena cava.

Diagnosis.—According as the symptoms are distinct and numerous, or few and general, will the diagnosis be easy or impossible. One of the cases which I will report will be of the latter character. If more careful physical examinations

were made I think the frequency of post-mortem diagnosis would be greatly lessened.

Care should be taken to differentiate between pleurisy or pneumonia of right lower lobe and hepatic abscess opening in this direction. Cancer of the liver, echinococcus and inflammation of the gall-bladder, ought not to be confounded with it. In two of the cases coming under my care I completed the diagnosis by use of a carefully cleaned hypodermic syringe. This instrument in competent hands could be used with far more frequency than it is at present without any damage ; even if penetrating perfectly healthy liver-tissue it can do no serious harm, if clean.

Prognosis.—The mass of medical opinion, tinctured as it has been by the reports of the Indian surgeons, is that the prognosis in this affection is *decidedly* unfavorable. To this opinion I wish to take exception, at least in such cases as we are likely to meet with in our climate, for I firmly believe that, with the new era of antiseptic surgery, the verdict ought to be modified in this, as it has been in every other branch of abdominal surgery. Let me quote some of the recognized authorities:

Macpherson says, "Prognosis is generally unfavorable, yet there is a chance if the abscess finds an exit for itself." "When air gains access, the result is seldom favorable."

Henry Morris, who was selected to write the article on the subject in the *Encyclopædia of Surgery*, a work in every way abreast of the times, says, "Prognosis unfavorable—especially if infective." "Recovery may take place if the pus *finds* an exit."

The prognosis will depend upon: I.—the kind; II.—location; III.—number and size.

Treatment.—It has become a surgical axiom that the earlier an abscess be evacuated the better. But in the literature the opinion seems to predominate that these abscesses are an exception, and some authors even go so far as to advise non-interference. With our present knowledge of antiseptic surgery, I believe a diagnosable abscess of liver can be opened without increasing the patient's danger either by Volkmann's or Grave's method. Certainly the plan of "laisser faire," of "letting nature take its course," ought to be given up, and dependence not be placed simply upon the routine treatment by tonics, stimulants and anodynes.

Macpherson says, "When pus has once formed the time for all active treatment is passed." Then really is time for it to begin. "As soon as *fluctuation* is felt use the aspirator." Don't! Because you can't empty such an abscess, and the treatment is only palliative, and may result in killing the patient by the escape of pus into the peritoneum.

McLean, who writes the article for Reynold's "System," says, "If it be true, as I believe it is, that the most favorable route an abscess can take is through the right lung, and the most unfavorable, *i. e.*, giving least number of recoveries, is through the abdominal wall, it appears to me unjustifiable to expose the patient by an operation to the risk of admitting *air* with all its mischievous properties into the cavity of an abscess." Here, in the light of our advances in surgery, need we fear the mischievous consequences of a little air?

Or again, Dr. Lowe, of the Madras army, than whom few have had a larger experience with this affection, says:

"Nothing can be more different from another than the method of the surgeon on the one hand and nature on the

other. The surgeon discharges the whole contents of the abscess at once, *air* (awful thing) takes the place of the pus, and however great the relief, the result is disastrous. Decomposition sets in, in the discharges of the cavity, unhealthy extension of the suppurative process, and the patient succumbs.

"I have attempted to imitate nature, but all in vain; air finally entered and the result was fatal."

I have to present four cases of liver abscess, three of which occurred during my interneship at Cook County Hospital, and the other at St. Luke's Hospital.

In two of the Cook County Hospital cases operative procedures were instituted by Volkmann's method, and recovered; in the third, the expectant treatment was adopted, and death resulted; in the fourth, a diagnosis was not made, because of absence of characteristic symptoms.

2139 Wabash avenue.

SUPPURATING VENEREAL BUBO; WITH REMARKS ON A METHOD OF SUBCUTANEOUS TREATMENT AND REPORT OF CASES.

By SCOTT HELM, M. D.

[Read before the Chicago Medical Society, August 2, 1886.]

The object of the present communication is not so much to treat of the pathology and symptoms of suppurating inguinal bubo, as to call attention to a method of treatment I have employed in some twenty-two cases which have occurred in my own practice during the past three and a half years. I have had no opportunity to give it an extensive trial, as I have had no hospital or dispensary facilities since I have employed this method.

The term bubo, although used in reference to an adenitis in almost any locality, should only be used to designate a circumscribed inflammation of the lymphatic glands of the groin.

In reference to the etiology of bubo I will enumerate chancre, chancroid and gonorrhœa, traumatism, septicæmia, or erysipelas consequent on injury to the inferior extremity. Of these, those incident to chancroid are the most commonly met with. The bubo resulting from gonorrhœa is a very rare form of the disease. In the *résumé* of cases given below there is one of which there was no doubt as to the gonorrhœal origin. The pathology of bubo, according to Armstrong, is an absorption by the lymphatic vessels of an irritating substance carried to the gland, the usual process of inflammation ensuing in consequence thereof. Sometimes this is limited to the gland; occasionally the adjacent tissues are involved. Microscopical section of such a gland shows hyperplastic formation of the cellular substance and reticulum. Rokitansky considers that the former process is more extensive than the latter.

Fox says that whenever a bubo is produced by the chancroidal pus which has found an entrance into and through the lymphatic vessels, this is certain to suppurate and to produce a chancroidal ulceration in the groin. This is not correct, for the inflammation may subside and the enlarged gland become smaller by the absorption of the neoplastic tissue. The inflammation of many of these glands subsides spontaneously, and still more so under appropriate treatment. However, there may be but little absorption and chronic induration remains, or necrosis of the gland substance results in the formation of pus. With the non-suppurating buboes this paper has nothing to do, so that I will proceed without further discussion to the description of the mode of procedure which I have adopted in those cases which go on to suppuration, and

a report of its use in my hands, to which method I desire to call your attention.

The advantages which are claimed for this method of treatment are, 1st, that when there are two or more suppurating buboes in the same chain of lymphatics, the second or third appears higher up or further away from the initial sore than the first one. Therefore, by placing the first glandular abscess in a perfectly aseptic condition and absolutely protected from any foreign or septic matter in the external atmosphere, the encroachment of the inflammation on the neighboring glands is thereby prevented. 2d. There is absolutely no scar or unpleasant after-appearance.

My attention was directed to this course in the following manner:

In April, 1884, I was consulted by a young man with an inguinal bubo on the right side, subsequent to chancroid of the frenum of the prepuce. It was already distended with pus, which was evacuated in the usual manner, and he was directed to return on the following day, which he failed to do. He did return, however, a week later, when he had another abscess in an adjacent gland. This was followed by a third, and then the three communicated by sinuses. He finally recovered, but was left with a chain of cicatrices in the right groin, which was anything but a thing of beauty. In August of this same year this young man's brother came to me with a bubo in the left groin and requested, if possible, to be saved from such a condition as his brother presented. I determined to aspirate this one and proceeded as follows: the parts were thoroughly cleansed and the needle of a hypodermic syringe introduced and one-half drachm of pus withdrawn. Then the cavity was washed out with a two per cent solution of carbolic acid, and subsequently injected with ten grains of iodoform suspended

in one-half drachm of glycerine. The needle was then withdrawn, and after the parts had been wiped perfectly dry, the point of puncture was coated with a film of collodion, a compress and bandage being applied over all. He was directed to return on the following day, when no apparent change had taken place; but on the third day the swelling began to subside, and nine days after was almost wholly gone. I saw him again in October, when he reported that there was no evidence of there ever having been any trouble. During the operation, especially during the introduction of the needle and the washing out of the cavity, he complained bitterly of the pain, and I determined at the next opportunity to employ the ether spray before beginning operations.

CASE II. Contracted gonorrhœa three weeks previously, which was followed by an enlargement in the left groin two weeks later. A large bubo presented itself, in which slight fluctuation was detected. This case was aspirated in the same manner as the previous case, with the exception that the ether spray was first employed for the purpose of local anæsthesia. This proceeding succeeded admirably until the washing out of the cavity, when he complained of considerable pain. The undoubted gonorrhœal origin of this case made it of especial interest. This case made an equally good recovery with the first. The greatest difficulty experienced was the inadequacy of the instrument employed, and the glycerine proved a poor menstruum in which to hold the iodoform in suspension. Soon after that I began experiments with oleic acid as a menstruum. This substance, as described in the U. S. Pharmacopœia of 1880, is a yellowish, oily liquid, gradually becoming brown, rancid and acid on exposure to the air; odorless, or nearly so; tasteless, and, when pure, of a neutral reaction. Specific gravity, 0.800 to 0.810.

Oleic acid is insoluble in water, but completely so in alcohol, chloroform, benzol, benzin, oil of turpentine, and the fixed oils. At 14° C. (57° F.) it becomes semi-solid, and remains so until cooled to 4° C. (39.4° F.), at which temperature it becomes a whitish mass of crystals. At a gentle heat the acid is completely saponified by potassium carbonate. If the resulting soap be dissolved in water and exactly neutralized with acetic acid, the liquid will form a white precipitate with test solution of acetate of lead. This precipitate, after being twice washed in boiling water, should be almost entirely soluble in ether.

Oleic acid, $C_{18}\ H_{34}\ O_2$, does not belong to the "fatty acid" series, but differs from the corresponding acid of that series (stearic acid $C_{18}\ H_{36}\ O_2$), by having two atoms of hydrogen less. It belongs to a series derived by oxidation from alcohols, which, like allyl alcohol, $C_3\ H_5\ OH$, have two atoms of hydrogen less than the normal mon-atomic alcohols, like propyl alcohol, $C_3\ H_7\ OH$. The alcohol, however, from which oleic acid is derivable is not known. Oleic acid is mono-basic, as is shown in the formula $HC_{18}\ H_{33}\ O_2$. Commercial oleic acid is obtained as a by product in the manufacture of glycerine and candles.

It is very necessary that the preparation used should be absolutely pure, and I have experienced a good deal of difficulty in obtaining such a specimen; all that I have been able to obtain in the market being dark brown and rancid. Parke, Davis & Co., of Detroit, however, made for me two specimens, one from soap and the other from oil of sweet almonds, which were what they should be.

Until quite recently I have used iodoform suspended in the oleic acid, which was a much more stable preparation than with the glycerine. Lately I have substituted iodol for iodo-

form, and found that it will remain in suspension in the oleic acid, and further than that, causes no symptoms of intoxication such as I experienced in two of my cases. The instrument which is now used consists of a barrel with a capacity of two drachms, and which is mounted on either side by two rings, for the fore and middle fingers, and a ring in the end of the piston for the thumb. There are three needles, two ordinary aspirator needles of different sizes, and one a canula mounted with a trochar. To these (whichever one may be in use) is attached the section in the center of which is a stop-cock, the opposite extremity of which is attached to the barrel by a smooth joint.

To recapitulate, the method is as follows:

The parts are thoroughly cleansed; the ether spray is used for the purpose of local anæsthesia; then the canula, attached to the stop-cock section and mounted on the trochar, is inserted into the center of the abscess; the trochar is withdrawn and the stop-cock turned in order to prevent the introduction of air. The barrel is then attached at its sliding joint and the pus withdrawn and the quantity noted. The barrel is then carefully washed and a two per cent solution of carbolic acid injected and the cavity thus washed out. After this has been withdrawn the iodol or iodoform, suspended in the oleic acid, is injected in like quantity to the amount of pus evacuated, after which the needle is withdrawn and the point of entrance, after being carefully dried, is coated with a film of collodion and a compress and bandage applied over all.

I have now employed this plan in twenty-two cases, and have had so far but one failure. In this case, the nineteenth, the patient went on a protracted spree the next day, and when I saw him next he had a chancroidal ulcer in the groin.

In one case—a mounted policeman—an induration like a

large buck-shot still remains. This man kept right on duty during treatment. One case had a double inguinal bubo, but in no case were there two in the same chain of glands.

209 Thirty-first street.

THE RELATION WHICH DIPSOMANIA BEARS TO FORENSIC MEDICINE. *By* EDWARD C. MANN, M. D., *Member of the Medical Society of the County of New York.*

The present law holds drunkenness to be no excuse for crime. The disease of dipsomania is not drunkenness. The state of intoxication is merely one of many symptoms of the disease. True dipsomaniacs are totally irresponsible for acts committed immediately before, during and after attacks, just as epileptics are, because of their intellectual condition before the paroxysm of inebriety—on account of the impulsive character of their actions and on account of the toxic delirium with which it is often followed. The great reason why the dipsomaniac is not responsible is, because he is not master of his desire to drink. Even in his lucid intervals, the dipsomaniac is not a normal man, and there is a modified responsibility attached to all his acts. The dipsomaniac is a sick man to be cured, not a criminal to be punished.

Dipsomania, the great diagnostic mark of which is an irresistible craving for alcohol in some form, coming on at regular intervals of either day, week, month or year, as the case may be, may be hereditary and evolved with the natural evolution of a person's organism, or it may be due to post-natal conditions.

Paroxysms of dipsomania are always preceded by depressive insomnia and excessive nervousness, like the other insanities.

What, now, is the real essence of this disease? It is deranged organic or special sensation or impulse which manifests itself, not as in ordinary insanity, by suicidal or homicidal impulse, or by the morbidly erratic feeling which misleads the judgment and conduct of the kleptomaniac, pyromaniac or nymphomaniac, but owing to the changing and misleading subjective impressions of the dipsomania he is impelled against his will and judgment, by a blind, irresistible impulse, to seek in excessive indulgence in alcohol for the relief of this subjective morbid condition of his nervous system. The craving is beyond the control of the patient. He cannot help it. His drinking is the product of disease. He is misled and perverted in the exercise of his psychic powers by abnormal condition of his brain and centric nervous system. I have seen inebriety or dipsomania in its hereditary forms exhibit, 1st, an abnormal aptitude, requiring an additional excitant factor to develop it into active morbid expression; 2d, the inborn defect so great as to require only the natural organic evolution of growth to reveal it; and, 3d, still greater, not requiring even this to unfold it, I have seen it displaying itself in states of organic retrogression and nerve-instability, so extreme as to be perceptible at the earliest period when the display of mind is perceptible at all, idiocy, imbecility and infantile insanity.

Morbid organic conditions, therefore, lie at the root of this disease. Take the case of a lady where normal character is pure and correct, where intellect is vigorous, who in habit is most abstemious, who, as a rule, never drank anything stronger than tea or coffee or water. This woman becomes depressed without adequate cause, suffers from insomnia, suffers from great nervousness. Then comes on a craving or impulse for alcohol, and perhaps a fondness for low society. She drinks till she can drink no more, until intoxicated, perhaps drinks

for several days; is then horror struck and filled with remorse, and is perhaps looked upon with horror by her nearest and dearest friends. Now, why has she done this? Surely not because she wanted the liquor and merely chose to indulge in alcohol to excess. She has obeyed an impulse or craving which she could not resist, which very likely she fought against. She could not successfully fight against the subjective morbid change in her organism which caused the craving. That has to be removed, if at all, by a careful course of medical treatment. That woman is not responsible either for her paroxysm of dipsomania nor for any overt act which she may commit in it, and she is liable to commit suicide, or homicide, or to become a kleptomaniac or to be nymphomaniacal. I have treated a score of such cases, and it behooves the law to respect medicine when the latter declares authoritatively that dipsomania is a disease, the subjects of which are laboring under a species of mental alienation, and not responsible beings. The subjects of this disease demand the protection of medicine and law, and not fine and imprisonment, and from my personal experience of fifteen years I cannot make my plea for them too earnest.

The disordered impulse or craving for alcohol, and, in like manner, for chloral and opium and some other drugs, dominates the character and morbidly masters the reason and the conduct. My experience and observation show the frequent interchangeability of inebriety and dipsomania with grave diseases of the nervous system, in which the neuropathic diathesis prevails. The dipsomaniac tendency of the constitution in some families seems vicarious, with the acknowledged or recognized neuropathic. I have frequently seen one branch of a family to show insanity, epilepsy or

organic brain disease, and another to reveal the neuropathic taint in dipsomania. The chief triumphs in the therapeutics of dipsomania belong to the plan of treatment which places the patient under medical supervision and restraint, maintains the physiological tone of the vaso-motor system, and which re-establishes the perfect stability of the higher cerebral centers, the psycho-motor and the psychical, up to the point of their highest resisting power. Tobacco should be dropped, to cut off nicotine empoisonment, the hours of rest and labor carefully regulated, night work discontinued, sleep encouraged, and time be given to rest for brain and mind. Rest is a condition of nerve repair and power, and want of timely rest causes much brain disease and neurasthenia. Depression, insomnia and nervousness must all be removed by proper treatment, and a trained resistance of the nervous system to the disease be brought about. The patient must be kept under treatment until the nervous system becomes vigorous and well poised and adequately recuperated. A strong brain and a well nourished nervous system is the state of physiological antagonism to the disease of dipsomania. Everything that tends to undermine nerve stamina and induce nerve disintegration must be stopped, and recuperative conditions and physical regeneration brought about by all means in our power. We must teach our patient how to build his brain up instead of exhausting it. Inebriety occurring from post-natal causes is a preventable brain and nerve disease. Inebriates should be forbidden marriage, always, both by public opinion and by law, for inebriety will breed its like. We need to stamp out the hereditary descent of organically defective persons. The world needs sound brains and vigorous nervous systems, and

progressive men should work to this end, so that dipsomania and kindred neuropathic diseases may be stamped out and suppressed.

As long, however, as the disease exists, let the unhappy subjects occupy their proper medico-legal relation, which is one of irresponsibility deserving protection.

SUNNYSIDE HOME FOR NERVOUS INVALIDS,
Brooklyn, N. Y.

A PROPOSED MODIFICATION OF PORRO'S OPERATION.

By JOHN BARTLETT, M. D., *Fellow of the Chicago Gynæcological Society.*

[Read before the Chicago Gynæcological Society, June 18, 1886.]

MR. PRESIDENT:

I desire to present to the Society this evening a method of procedure in cæsarian section which possibly may in some cases be substituted for Porro's operation.

No operation in surgery has so interested the world as that of cæsarian section. By some, records of it are considered to be as old as written language. Not only has it interested surgeons; it has engaged the attention of legislators and ecclesiastics. Invested with the glamour of superstition and romance it has played a part in history. The progress of the operation may here be briefly outlined. Though so few early authentic records of cases have been handed down to us in the annals of surgery, it is yet certain that in the time of the first systematic writer on obstetrics, the operation was frequently put in practice—Mauriceau says, speaking of his own times, "it is done by

ignorant persons every day in the country," and so great and frequent were the abuses of the operation after his day that a number of the most distinguished surgeons and obstetricians of Europe condemned and opposed it.

Notwithstanding the very great interest with which the cæsarian section had been for so long regarded, the first suggestion as to its improvement seems to have been made by Michaelis, of Marburg, in 1809. He is quoted by Maygrier as recommending that extirpation of the uterus be combined with cæsarian section, to the end that a woman with a pelvis so narrow as to preclude natural birth could not again become pregnant. As cited by Harris, he said, "It is indeed a question whether the cæsarian section would be made less dangerous if with it were combined the extirpation of the uterus."

In 1828, Dr. James Blundell, of London, in his classical midwifery, wrote in his chapter on cæsarian section as follows: "In the hope of unlocking the abdomen for surgical operation, I have myself endeavored to prove that extensive divisions of the peritoneum are not in general followed by fatal results. * * * When I first turned my attention to the profession I used formerly to hear that, like wild fire, an inflammation, commencing in a spot of the peritoneum, might be expected to spread rapidly over its whole surface. That the risk of diffused peritonitis has been greatly exaggerated, I have endeavored to show in a small paper, and from the adverse opinions of my contemporaries on this point I confidently appeal to posterity. In some future age, when our hearts and their petty passions are quiet in the dust, this opinion, whether right or wrong, of great importance to our race in all future ages, will probably be decided by accumulated

experience—may I not add, in the affirmative? to this dijudication I think it better to commit it. * * * In speculative moments I have sometimes felt inclined to persuade myself that the dangers of the cæsarian operation might, perhaps, be considerably diminished by the total removal of the uterus. If the cæsarian section be performed on a rabbit in the ordinary way, unless I am much mistaken, it will be found that the animal generally perishes in consequence. But in four rabbits recently delivered, I made an opening above the symphysis pubis, and raising the womb from the abdomen, I elevated them above the aperture. * * * Having applied my ligatures about the vagina I completely removed the wombs. * * * I (then) drew forward the ligatures till I brought the raw surface, left by the removal of the wombs, in contact with the abdominal incision internally, * * * trusting that this might promptly contract adhesion with the inner surface of the abdomen. Beyond my hopes the operation succeeded; of the four rabbits, three recovered, the fourth dying in consequence of the ligatures slipping from their place. In performing cæsarian delivery on the human body, perhaps this method of operating may hereafter prove an eminent and valuable improvement."

Lately the interest in the cæsarian section has greatly increased. It has been stimulated by the successes in other lines of abdominal surgery. Surgeons, the world over, have been impressed with the possibility of decreasing the fatality of this operation by applying to it the principles which have grown out of Listerism. A hopeful confidence so aroused has led to more frequent and earlier resort to the operation, and has placed it more and more in competition with craniotomy. Interest in it has been greatly enhanced of recent years also by the adoption by surgeons of the method of

operating practiced by Dr. Porro. Dr. Porro some years since, struck by the fatality of cæsarian section, and reflecting upon the cause thereof, conceived the operation which has since borne his name. Many of the unfavorable results of the old operation are to be ascribed in the main to the impossibility of so closing the wound in the uterus, that closure may be maintained. The incision in the womb, the relations of whose walls are constantly changing, could not be stably united by a suture, which would prove insufficient after a few hours, because of changes in the relations between the knotted loops of ligature and the ever altering tissues which they embraced. Dr. Porro cut the Gordian knot of this problem by the removal of the entire body of the uterus,— a procedure which also eliminates the dangers of hæmorrhage from the uterine incision as well as those incident to the open wound presented by the placental site.

In the Porro operation the danger of shock from the ablation of the uterus and of complications arising from the management of the abdominal wound, especially those incident to traction on the pedicle and the presence of a drainage tube, when this is used, are superadded to those of the cæsarian section.

The essential features of Porro's operation are the seizure of the emptied womb by a wire clamp at such point as will admit of retaining the amputated stump within the abdominal wound. The wire ligature is tightened from time to time if bleeding threatens, and is allowed to remain until the projecting uterine tissues on its distal side have lost vitality.

In the hands of some special operators the results of the method have proved most promising; thus in the maternity of Milan, of fourteen women operated upon, eleven were saved.

According to Dr. R. P. Harris, in the Encyclopedia of Sur-

gery, "the Porro operation has entirely superseded the old method in most of the lying-in hospitals of Europe, and has reversed their tables of mortality completely. Where for many years every patient died, now at least 50 per cent, and in some hospitals a larger proportion, recover. It is true, antiseptic measures, preparative treatment and early operating have had much to do in effecting this, but there is also a very decided diminution of the death rate to the operation itself. It has failed in Great Britain in nine out of ten cases, but this is due to the subject more than to the operation."

The latest statistics of the Porro operation (Harris) indicate in 151 operations 67 successes, giving 44.3 per cent of recoveries.

More recently, results of the Porro operation, as contrasted with the old method, especially when it was considered that every Porro operation had the advantage of the new modes of wound dressing, have been disappointing.

In the old operation the wound in the uterus under the new order of dressing, instead of being left to nature, has been in more recent cases closed with wire sutures, reinforced by superficial stitches, both so adjusted as to turn in the cut edges of peritoneum and retain the serous surface of one edge apposed to the corresponding surface of the opposite edge in a manner designated as "welting." Some autopsies have shown that this suture, at least in some instances, remained tight, although it has also been noted that the edges of the uterine wound corresponding to the uterine cavity are so drawn upon by the muscular fibre as to suffer eversion and thus present raw surfaces to the action of the uterine contents.

The statistics of more recent cæsarian operations (1874) in 1605 operations give a percentage of recoveries of 54.

In 1884 Prof. Mueller, of Bern, at the International Medical Congress, declared that the question as to which operation offered the better results, the old or the new cæsarian section, could not then be determined, inasmuch as the old method had not as yet been sufficiently tried under the new system of wound management.

Charpentier in his Midwifery says: "The tendency at present is to return to the old cæsarian operation."

The substitute for Porro's operation which I have to propose is as follows: The operation proceeds as in cæsarian section till the child is removed, the actual cautery being used in opening into the womb. Then, instead of dragging the womb out of the abdomen through the abdominal incision it is dragged out of that cavity through the vagina. The operator passes a Well's clamp somewhat modified in its prehensile surfaces and properly curved in coincidence with the parturient canal to the fundus of the uterus and there secures a firm grasp into the uterine tissues. By traction upon these forceps, and pressure, and suitable manipulation from above, the fundus of the uterus is depressed into the body of the organ, and drawn through the cervix into the vagina to produce complete inversion. The clamping wire is immediately adjusted, and excision of the uterus and appendages effected at a suitable distance from the vaginal junction. The abdominal wound is closed, and attention is given to the stump in reference to hæmorrhage as in Porro's operation. In lieu of the clamping forceps in some cases it would answer better, doubtless, to pass a loop of copper wire through the walls of the uterus to be caught upon a suitable instrument, as a rod possessing the flexibility of block tin or solder, passed *per vias naturales* to receive it. The advantages of this

operation over Porro's method which suggest themselves are: *First*, that the abdominal cavity is thoroughly closed; the abdominal incision, not being embarrassed by the presence of the large pedicle, is as perfectly and as quickly closed as in any other laparotomy. By the process of inversion the pedicle is placed outside of the abdominal cavity, while what may be termed the uterine inlet made into the peritoneal sac is closed by the clamping wire opposing serous surface to serous surface, thus offering the best prospect for speedy and certain agglutination and closure. *Second*, the relation of the parts in the suggested procedure are much more natural, and much less strained than in the *status* in which Porro's method leaves them. *Third*, in the event of drainage becoming necessary in the course of treatment, the effecting of an opening for a tube in the plan proposed can be accomplished very much more easily and safely than in Porro's plan, and the tube being introduced, its situation and direction would be the best possible for thorough cleansing of the cavity to be washed.

Serious objections, at first thought, will occur to the mind of every gynæcologist. These will be here stated and subsequently met, as well as may be, by considerations that may be urged in answer to them.

First:—Of all the accidents *post partum* none is generally accredited with so violent a shock to the patient as the very condition which is here made a main feature in a method proposed as conservative. In the old, and in Porro's operation it almost always happens that, either with or without the partial or complete separation of the placenta, the uterus contracts. With such a condition of the uterine walls inversion would prove difficult and sometimes probably impracticable. Hunter

said a contracted uterus was as difficult to invert as a jack-boot. When to these difficulties incident to the first step of the operation are added the shock from clamping and incising the uterus, it would seem that the dangers incident to the method proposed might exceed those of the Porro operation.

Second:—In Porro's operation, as in the old cæsarian section, danger begins from hæmorrhage at the moment of incising the uterus, and in the method proposed this danger would be so much the greater as the time elapsing between the two events, incision and snaring of the pedicle, is longer. In the established operations in at least one-sixth of the cases the placenta has been encountered directly in the line of incision. In such instances the bleeding from the double wounds, uterine and placental, would, in an especial manner, embarrass the operator and endanger the patient.

Third:—It must be remembered that in the great majority of cases in which the operations under consideration are undertaken there exist contractions of the pelvis, which may seriously interfere with the main step of the operation, inversion of the uterus.

Fourth:—Apart from these more serious objections it may be urged against the plan by inversion that dilatation of the os uteri, a *sine qua non* of the method proposed, does not always exist at the time of operation, and that it may not always, or even often, be practicable safely to effect it.

These objections will now be considered seriatim. As to the first, regarding the shock to the system so often reported in association with inversions, it may be stated that associated with inversion also is very generally hæmorrhage, and that to this all-powerful cause of depression may be ascribed much of the shock noticed in cases of inversion. While it must be admitted that in some instances inversion

alone, entirely unassociated with bleeding, seems to have produced great shock, and even death, it may yet have happened that in some of these cases, other injuries, as laceration of the uterus, accompanying the inversion may have been partly responsible for the profound impression observed, and one is the more justified in assuming that this objection may be over estimated, from the fact that in a number of cases carefully observed and reported, inversion has produced no shock whatever, and has in fact been accomplished without the knowledge of either the patient or obstetrician.

Blundell says "it sometimes happens that the patient scarcely sustains a single symptom of serious inconvenience (especially if reduction be speedily effected). It will sometimes happen that not a single pressing symptom shall occur."

Dailliez thinks that it is perhaps less dangerous than is generally supposed. He says "the character of the prognosis depends less on the accidents inherent to introversion than on the circumstances which precede, accompany or follow it. If the contrary opinion prevail it is because the accidents essentially dependent on inversion have not been sufficiently distinguished from those which result from its complications and efforts made to remedy it. Even the hæmorrhage, all other things being equal, is less copious and dangerous than that which sometimes follows delivery in inertia of the uterus without inversion."

Dugé says "death may have occurred from violence and not from the inversion *per se*."

Dr. Crosse, of Norwich, states that of 109 *fatal* cases of inversion 72 (only) perished within a few hours (66 per cent). Dr. Lee reports 52 cases; in 37 of these the uterus was restored in 24 hours, and of these only 5 died.

By reference to veterinary surgery cases may be adduced to show not only that uterine inversion among animals is not *per se* especially dangerous, but that inversion, complicated with accidents in themselves accounted most dangerous, is not necessarily fatal. In such cases reposition alone, unaccompanied with any care for existing uterine lacerations may be followed by perfect and speedy recovery.

A mare was delivered of a colt of about four months naturally.* A few hours afterward the veterinary found the uterus inverted and presenting a laceration of about two inches at its fundus. The hostler having seen the mare making violent efforts to extrude a mass of flesh like an after-birth, pulled upon the body, and in that way the tear had occurred. Reduction was accomplished with difficulty. The animal was fully convalescent on the eighth day, and completely recovered on the fifteenth.

M. Guillaumin was called to a cow which had just calved. The inverted uterus soiled with blood and debris of the placenta lay on the litter. A mass of intestines about a yard long had escaped through a laceration in the vicinity of the neck. The intestine was returned, and without attempting to approximate the edges of the laceration the womb was replaced. At the end of eighteen days the animal had resumed her usual regimen.

The following case was reported by M. Gellé, professor of veterinary surgery at Toulouse. A heifer, after a very laborious parturition, had an inversion of the womb. Reduction was effected two hours afterward. The uterine tissue, red and friable, did not withstand the pressure of the hand; perforation, through which the arm passed, resulted. Notwithstanding this accident reduction was accomplished; one hand

* From J. Rainard.

meanwhile preventing the escape of the intestines. The cow convalesced on the third day, and cure was complete on the tenth.

M. Eleout was called to a cow whose uterus was prolapsed and inverted. The left horn was reduced without difficulty; the right was also on the point of being reduced when the cow, by a sudden movement, thrust the horn of the uterus against the hand of the operator so that it pierced the organ and sank through it half way up the arm; nevertheless, the operator replaced the womb, retaining it in position by inserting a bottle as a pessary. On the fifth day the bottle was removed. On the fifteenth day the cow was in good health.

As to the objection regarding the difficulty of inverting the uterus after contraction, it must be admitted that contraction of the uterus into a firm body would certainly render more difficult the inversion. The facility with which the flaccid uterus may fall into itself like tripe, or a wet bladder or the finger of a glove, certainly contrasts strongly with the difficulties encountered by experts in restoring the inverted uterus, even as early as four hours after labor. In the absence of any experience in the matter of purposely inverting the uterus, it will be necessary in support of the practicability of this feature of the proposed operation to draw upon experience derived from practice in midwifery. A variety of facts may be brought to bear to show the likelihood of success in efforts at inversion which may be in a measure classified thus: Direct facts as to the ease with which it has been accomplished directly after labor;—facts showing the readiness with which from trifling causes inversion may be induced within a few weeks after labor;—facts seeming to show that it may even occur in the virgin uterus, and apparently from

minor causes. Replacement of the uterus after inversion, whether that organ be lax, moderately condensed, or in a state of complete involution, is an act so nearly akin to that of inversion that any facts tending to indicate the facility with which an inverted uterus may be restored to position have a bearing upon the question of the practicability of inverting the uterine tissue. Hence in the category of available facts for our present purpose belong those showing facility, or possibility of reduction of the inverted womb at any stage or condition of inversion. Referring to inversion, Dr. Barnes says: "It may be supposed that the uterine ligaments would offer resistance to obviate spontaneous inversion, and the inference from this assumption would be that inversion must be the consequence of direct violence. But in reality this resistance is easily overcome. During gestation the ligaments become elongated, so as to be easily drawn into the hollow or cup formed by the inverting body of the uterus. The moorings of the fundus are too slack to keep this part up. The connections of the cervix to its ligaments, to the bladder and vagina, hinder the inversion of this part for a time." In this connection the words of Hunter may be cited: "The flaccid uterus is as easily inverted as the finger of a glove." By one writer the feel of it is given as that of a wet bladder, and another author assures us that nothing but the sustaining power of a temporarily devised stem prop would in one case prevent the relaxed fundus from falling down into the os after reduction. Several centuries ago when the practice of the obstetric art was almost exclusively in the hands of midwives, inversion of the uterus was common, and the accident is almost invariably referred by authors to the practice of pulling upon the cord. A practi-

tioner informed Dr. Gooch that he once inverted the uterus by merely putting the cord on the stretch. A number of cases are reported where a short or shortened funis has produced inversion, and others where the weight of the child, when the woman has been delivered standing, has caused the accident. Barnes says "manual expression produced one case that he saw, and other similar instances are reported. "It has been produced by strong pressure on the abdomen." According to Boivin and Dugé, inversion has been produced by instruments employed for the removal of polypi. Baudeloque reports a case which occurred six days after labor; and Byford one which took place five weeks after delivery, from apparently slight causes; and cases are reported by other authors of inversion of the uterus in virgins. Instances are related in which inversion occurred and replacement was effected immediately after labor without suspicion on the part of the patient or attendants that anything unusual had occurred. Baudeloque reduced a recent case in half a minute. In another case in which the uterus had been inverted two hours, he replaced it in two minutes.

Radford reduced an inversion in fifteen minutes, although several days had elapsed since its displacement.

Mr. Charles Cowan reports a case caused 80 hours after labor by the patient's rising suddenly out of bed. Prof. J. Y. Simpson reduced the inversion five or six days after labor, "in a short time with little difficulty." And, instances wherein replacement has been effected as late as one week after labor are on record. Baudeloque recorded one sixteen days after parturition.

The caution given by every teacher of midwifery against the employment of anything like forcible traction on the

cord in efforts to deliver the after-birth, is in itself a strong intimation that the uterus may be readily inverted *post partum.*

Restorations of the inverted uterus years after the accident are now of frequent occurrence. In these restorative efforts the operators, apart from the great disadvantage which chronic continuance of the inversion, and the changes incident to that state presented, labored under the very serious disadvantage of most imperfect counter-pressure, and but little or no power of cervical dilatation. The achievements of gynæcologists in reinverting uteri years after their inversion in the face of these difficulties, furnish a strong presumption that an operator would not be foiled in his efforts to invert the uterus as a step in the procedure recommended, especially as in the circumstances here suggested, the uterus is exposed to manipulations *a tergo*, as well as *a fronte*, so that every facility is presented to the surgeon in his attempts at inversion.

It is to be considered also that many of the cases on record where difficulties in replacing an inverted uterus were extreme, occurred before the discovery of anæsthesia. From statements made rather recently it would appear that the obstetrician of today has at hand means of overcoming the spastic contraction of the uterus *in toto.* For very many years the student of obstetrics has been taught to apply a preparation of belladonna to the cervix in case of rigidity during labor; and, notwithstanding the general incredulity as to the efficacy of the means, it still holds its place with some writers as an efficient agent in these conditions. About 10 years ago (quoting from the half-yearly *Compendium of Medical Sciences*) Dr. E. Fraenkel was led, by the

experiments of Breslau on the effect of the subcutaneous injection of atropine on uterine contraction, to turn his attention to this drug. Having employed it in combination with morphia in many cases, he has come to the following conclusion: In cases of spastic contraction of the uterus, either in the second or third stage of labor, whether the whole or only the part of the uterus is involved, the use of the combined subcutaneous injection of atropine and morphia, followed by the administration of chloroform, is the safest, surest and quickest method for overcoming uterine spasm, and rendering operative interference possible.

Dr. Fraenkel recommends these agents, among other conditions, to abate "violent contraction of the uterus met with during the third stage, due to premature attempts to remove the placenta." This combination recommended by Dr. Fraenkel, injected into the cervix uteri at the proper moment before the operation, might be relied upon to antagonize any excess of contraction of the uterus which experience might show to interfere with the efforts of the operator to invert the uterus.* In regard to the objections having reference to hæmorrhage from the uterine incision it will be observed that in the plan proposed the incision through the uterine walls is made with the cautery. While it is probable that the protecting power

*Fraenkel states that the use of atropia in spastic uterine contractions "got into disrepute through a case published by Spiegelberg, in which the subcutaneous injection of one-fortieth of a grain was followed by dangerous atony of the uterus," and he recommends that the dose do not exceed one-sixty-fourth of a grain. The fact that the one author obtained an excessive action of the medicine, and that the other limits accurately the dose, suggests the power of the agent to bring about the condition of the uterine tissues desired in efforts at inversion. It will be noted that the circumstances under which it is here proposed to use atropia render the degree of atony induced of less consequence than in cases of labor. For, in the case here supposed, the ligature is to take the place of the contraction of uterine fibers in controlling hæmorrhage.

of this agent would guarantee the arrest of the bleeding from the uterine wound for a time under conditions of rest, it must be admitted that, in subjecting these seared edges to the changes of relation incident to the process of inversion, there would be danger of re-opening the vessels and loss of blood. In such a case the assistant managing the thermo-cautery would follow the edges of the wound with the purpose of re-touching bleeding points when practicable. That the actual cautery may arrest the hæmorrhage from the uterine wound, even under circumstances of change in its size, etc., the following fact proves.

Dr. R. W. Felkin witnessed a successful case of cæsarian section by a native operator at Kaeura, Central Africa. From Dr. Breitmann's account it will be seen that the bleeding was staunched by the actual cautery. After the extraction of the child the operator grasped the uterus and compressed it with both hands with all his might. "What bleeding still continued was stopped by the actual cautery, the operator still compressing the uterus until it was firmly contracted. In regard to hæmorrhage in eighty-eight cases cited by Playfair, the particulars of which were carefully noted, severe hæmorrhage occurred in 14, six of which terminated successfully, and in four only could the fatal result be ascribed to the loss of blood. In one of these the source of hæmorrhage is not mentioned, in another it came from a wound in the abdominal wall, and in the other two from the uterine incision being made directly over the placenta. In neither of the two latter was the loss of blood immediately fatal; for it was checked by uterine contraction and only recurred after many hours had elapsed."

Says Baudeloque, and others endorse his statement, "There is little blood discharged from the wound in the uterus when it has been made in the middle of the anterior

part; except the placenta be attached there, and even then the hæmorrhage does not last long, if the uterus contract firmly."

Dr. James Edmunds says, in reporting a successful case of cæsarian section in which the placenta lay in the line of incision, "I now cut into the uterus; on deepening the incision blood gushed rapidly out: I instantaneously plunged the knife completely through the uterus and placenta and thrust two fingers through the wound and removed the placenta. "After careful examination, we estimated the entire loss of blood at about fifteen ounces."

James Whitehead reports in his case of cæsarian operation; "The cut into the uterus was about seven inches long. A small incision was first made with the scalpel and continued with the probe pointed bistoury. The loss of blood amounted to about eight or ten ounces; it issued principally from the placenta while being torn through. There was scarcely an ounce of blood from the divided edges of the uterine parietes."

Robert P. Harris says "hæmorrhage is rarely the cause of death."

As to the objection regarding the occasional wounding of the placenta, it holds, in a much less measure, however, as to Porro's operation as well. In such cases the cautery knife would have to be mainly relied upon as in other instances, where the uterine wound alone is concerned. The placental bleeding would be in some measure controlled by it, and, as aids, the ovariotomy forceps of Sydney Jones as recommended by Fancourt Barnes might be depended upon to assist in restraining the hæmorrhage while the child was being delivered. After the removal of the placenta, bleeding from its site, if profuse, should be combated by the application of the solu-

tion of the perchloride of iron, or by a cautery plate, as experience should show to be preferable. In regard to the third objection having reference to the narrowing of the pelvis and the difficulties in the way of the suggested procedure thereby presented, it may be stated that while narrowing of the pelvis would always prove more or less of a hindrance, yet it must be borne in mind that in the majority of cases of deformed pelvis, however much any given diameter may be shortened, there yet remain spaces to one or the other side of the narrowing line through which the womb might be made to pass by the *vires a fronte et a tergo.* Generally in the process of inversion, as the uterus would be drawn through the superior strait, four thicknesses of the organ would be presented at the conjugate; and in cases of unusual narrowing, difficulty might be experienced in this manœuvre. In extreme contraction of the pelvis, dexterity and ingenuity on the part of the operator might enable him to cause the organ to pass in the process of inversion a very narrow space, possibly no wider than twice the thickness of the uterine parietes. Thus by making the incision, where practicable, near the fundus the fold formed by one lip of the wound and its apposed surface of uterine wall might be made to pass; to be followed by a similar fold of the corresponding edge of the incision.

Stein and Weigand recommend that after the operation of cæsarian section if the uterus does not contract so as to sink into the pelvis, it shall be seized by the whole hand, as in taxis for hernia, and be pressed down into the pelvis. In a narrow brim, this procedure, they think, insures that the uterus once pressed into the pelvic cavity cannot rise out of it again. Spitzbarth makes a similar suggestion. These recommendations of practical men suggest the feasibility of inverting the uterus by adroit manipulation even in cases of marked contraction. It

may as well be stated, however, that the plan of operation here proposed has its limits of practicability as compared to the Porro operation, cases of extreme pelvic obstruction as well as those involving such changes in the parenchema of the uterus as would render inversion dangerous, if not impracticable, would, of course, not fall in the category of those to which the method here suggested might be applicable.

In regard to the fourth objection as to the hindrance presented by a non-dilated os uteri; it may be said that according to the majority of authorities, the most favorable time for performing cæsarian section is after labor has set in, and should interference be delayed till the os uteri were softened and ripe for dilation in the greater number of cases the delay would not prove injurious to the mother or child.

With the present means of dilating the cervix during labor, it is to be presumed that while an imperfectly dilated os would no infrequently prove a hindrance it would not often be an obstacle in the way of the proposed operation. Barnes may here be cited; speaking of the induction of labor, he says: "By the aid of the water bag the cervix may be expanded sufficiently to admit of delivery within an hour. * * * In cases of placenta prævia we have effected adequate dilatation in half an hour." Dr. Lusk says the rigid cervix can be forcibly dilated to almost any extent by hydrostatic pressure*; and other writers refer to this agent as a means which enables them to set almost the hour of delivery when necessity for forced labor exists.

Dr. Thomas, in his operation for very obstinate cases of inversion, found no difficulty, by means of his peculiar dilator, in dilating the cervix prior to reposition. It may be presumed, therefore, that in cases demanding cæsarian section, if necessary,

* Dr. Lusk gives a caution against the abuse of this power.

dilatation of the os uteri sufficient for inversion could generally be safely effected. As adjuncts to the more decided measures, the hot water douche, and the local hypodermatic use of atropia and morphia might be relied upon.

It may be well here to refer to some details of the operation. It is obvious that in the adjustment of the ligature it would be desirable to make the inversion complete. Experience alone could determine the point of election for placing the constricting wire. All that portion of the neck of the uterus lying after labor below the vaginal attachment would be entirely out of the way of the operation, and it would be likely that the line of junction of this collar of flesh would serve as an index of the proper point for ligation. It will be noted that in the case reported by Boyer, after a number of days the ligature was no longer within reach. It will be borne in mind, as a useful hint, that in the case presently to be cited where ablation of the inverted uterus was made in the bitch, the stump of the organ sprang suddenly inward. These facts are suggestive. They point out the fact that the ligation and abscission is in a manner a liberation of the tissues forcibly drawn out of position by the act of inversion, a liberation greatly tending not only to diminish shock and to relieve discomfort, but also to lessen the liability to any inflammation which extreme dragging upon the pedicle might incite or foster. Attention is called to the fact that where reference has been made by observers to the character of the stump after the cure, it is often spoken of as presenting an appearance very similar to that of the os in the natural state. Where the line of ablation is somewhat above (anatomically) the infra vaginal cervix it is drawn so far upward as to free the cervical collar, and the fibres of this ring reasserting themselves close below the stump and "reconstruct" the os tincæ.

It may be inquired, What would be the relation of the ovaries to the proposed line of ligature in an inverted womb? Several writers refer to the ovaries as resting on the edge of the inverted uterus as if about to fall into the cavity. A specimen from which this statement has been deduced forms the original of one of the standard cuts representing that condition. It is a case of partial, not of complete, inversion. Some authors, as Boivin and Dugé, state that the ovaries are not within the cavity of the uterus. Other writers, as Levret, report cases in which the ovaria were found within the inverted cavity. Schultze states that they are there found, and the cut that accompanies his text so shows these organs. In a number of instances, recent and old, the amputated uterus has been found to contain one or both ovaries. In many cases of chronic inversion the appendages have not been found within the cavity of inversion. A study of the relation of the ovaries after complete inversion of the uterus will lead to an indorsement of the statements of Winckel and Schroeder as correct. Winckel writes, "In puerperal inversion, as a rule, the tubes and ovaries fall into the cavity (of inversion)."

Says Schroeder, "In recent puerperal inversion all of the appendages are in the uterine funnel."

In the records of medicine are not wanting quite a number of cases the history of which teaches that the plan of operation here proposed may not be fatal. Some of these are here appended.

* Obs. 170. Perrachi, in 1837, reports that a midwife, in a case of inversion of the uterus occurring during labor, so

* NOTE. The cases here numbered have been translated from the work of Denucé on Uterine Inversion.

dragged upon the tumor as to pull away the womb. Nevertheless recovery resulted.

Obs. 171. Kuhlbrand, in 1839, refers to a case of inversion in which part of the tumor was pulled away. Recovery followed.

Thomas cites a case, 1842, in which "one child being born, the midwife felt the breech of another, as she supposed. Around it she passed a handkerchief, pulled with all her force, and dragged away uterus and annexæ. The patient recovered."

Obs. 173. A bone-setter, as reported by Breslau, in 1850, violently dragged away the inverted uterus and its appendages. A cure took place in seventeen days. There remained, however, at the upper portion of the vagina, an ileo, or recto-vaginal fistula. Finally, after a time, fecal matters resumed their usual course.

Obs. 175. X——— in 1851. A midwife tore away the uterus and one of the ovaries by violent traction on the placenta. Nevertheless recovery resulted.

Obs. 174. Oldham in 1850 reports that a midwife pulled upon the uterus, inverted it and tore it partly off. She completed the ablation with a bistoury. The woman recovered.

Obs. 172. Rossi reports a similar case. A midwife, by immoderate tractions, detached a great part of the uterus, and finished the operation with a knife. Restoration was very rapid.

Obs. 167, 168. Velpau, in 1836, cites two cases, one related by Viradel, the other by Caille, in which midwives excised inverted uteri. Both cases ended in recovery.

Obs. 164. Bernhard, in 1802, on the authority of Breslau,

relates the experience of a midwife, who, on the occasion of an inversion occurring at the time of labor, cut off the uterus with a razor. The hæmorrhage, which was violent, was arrested by ice. The patient recovered with a rectocele.

Obs. 34. Wrisberg, in 1782, reports the fact that a midwife, in a case of inversion produced by violent tractions on the placenta, had the temerity to resect the womb with a knife. Torrents of blood flowed; hæmorrhage was arrested by syncope. Wrisberg was called two days afterward. He recognized an opening two inches in diameter between the vagina and the abdominal cavity almost closed, however, by the bladder filled with urine. The condition of the woman improved from day to day, and at the end of three months she was able to call upon Wrisberg.

Obs. 163. Osiander, professor at Gottingen, about the year 1800 reports that a midwife, having drawn the womb with the placenta out of the vagina, cut it off at the level of the latter without the ablation proving fatal.

Slevogt, a surgeon of Jena, removed the uterus and fallopian tubes, under the impression that he was merely excising an excrescence; the woman perfectly recovered.

Vieussens removed the uterus for inversion successfully, only a small portion of the womb remaining.

Obs. 110. Clemencen mentions the fact of a complete inversion of the uterus, followed by gangrene, in which recovery took place.

Murray reports a case, says Barnes, where the uterus was found inverted twenty-four hours after spontaneous expulsion of the placenta. It was released, and again found inverted on the following day. On the thirteenth day it sloughed off without hæmorrhage. The patient recovered.

Rousset, 1581, Primrose, and Radford have given cases in which the inverted uterus appears to have sloughed off without compromising the patient's life.

Obs. 32, Faivre, 1767, surgeon of Vesoul, reports as follows: A midwife delivered a young woman, using great violence in delivering the placenta. Finding the uterus inverted she pulled upon it with all her force with no other effect than to increase its volume. A day or two after, the uterus having fallen into gangrene, Faivre applied a ligature. Twenty-seven days thereafter, the patient meanwhile suffering greatly from fever, convulsions, etc., the uterus fell off. After a month of fœtid suppuration the wound cicatrized. The woman recovered her strength with astonishing rapidity.

Obs. 169. Cooke, in 1835, relates the following case: A midwife dragged upon an inverted uterus, which she mistook for a second child, and partly detached it. Cooke was then called and applied a ligature above the mutilated portions of the uterus; these he retrenched. The uterus contained the right ovary and the fallopian tubes. The woman recovered, without accident, other than the temporary induration of a breast.

Obs. 201. In Bradley's case, 1874, complete inversion was produced by the midwife's pulling on the cord. Dr. Bradley was called 15 days afterward. The uterus, much inflamed, presented a spot of gangrene as large as a dollar; the pulse was 120, and the countenance hippocratic. Having tied the vaginal arteries he amputated the uterus. In one month the woman was walking about the room. Her recovery was complete.

Obs. 235. Hunter, 1799, on the eighth day after labor applied a ligature to an inverted womb, and six hours later excised the organ, no pain, no bad symptom arose after the operation. The patient left the bed on the 15th day and was well at the end of a month.

Obs. 165. Rottger, in 1820, citing Breslau, reports a case of inversion due to a polypus. A bone-setter excised the tumor piecemeal. This rash operation led to a violent hæmorrhage. Rottger, called in time, succeeded in ligating the uterus and excising the part below the ligature. The woman recovered.

Obs. 166. Weber mentions an inversion due to a polypus. A midwife having pulled away the tumor, gangrene occurred. Weber placed a ligature on the vagina and amputated beyond it on the fifth day. The patient recovered.

Obs. 31. Anselin, surgeon of Amiens, 1764, reports a case in which an inversion of the uterus recurred after primary reduction on the 15th day, forming a tumor as large as an ostrich egg between the thighs. Anselin applied a ligature and seven days afterward amputated the organ. In seven weeks the woman was entirely recovered.

Dr. Cleghorn, of Glasgow, 1810, reports the following case:

"At the end of half an hour after a natural but laborious labor the placenta had not separated. The midwife proceeded to remove it; in doing which she employed so much force that she dragged out the after-birth and uterus together. * * * The patient fainted away; but on her recovery she found there had been a profuse flooding, and that there was a large tumor externally. No attempt was made to return it, and she therefore remained in this situation for three weeks, when with the greatest difficulty she walked to Welshpool, a distance of nearly three miles, where she received medical attendance. The exertion of walking brought on a very violent inflammation of the parts, which during the first fortnight was followed by a great

sloughing of the coats of the uterus, attended by a very fœtid ichorous discharge. A fortnight after this time, and about five weeks subsequently to the accident, it was found that reduction of the tumor was become impracticable, and that extirpation was the only chance left for putting an end to the poor woman's sufferings. The whole of the uterus, and at least an inch and a half of the vagina, were excised. The patient in about a fortnight began to improve in her flesh, and in six weeks after the operation she was perfectly recovered."

Several histories of *post partum* accidents occurring in animals which cannot fail to bear upon the questions involved in this paper are here appended. They are extracted from an admirable work published at Lyons in 1850, entitled "*Traité complet de la paturition des principales Femelles Domestiques, par J. Rainard.*"

M. F. Huillet reported the following: A cow calved without accident; two hours afterward inversion occurred. The veterinary proceeded to replace the organ, and when the reduction was partly effected the parts were thrust so rudely outward by violent expulsive efforts that the hand perforated the fundus, and out of the accidental opening there escaped a considerable mass of small intestines. This was the sixth case of the kind which had fallen under the observation of M. F. Huillet and as yet he had never succeeded in remedying the accident by suture. He therefore resolved upon ablation of the viscus which had been perforated. After having carefully returned the intestines through the laceration, which was not less than six or seven inches in extent, he applied a double ligature, reinforced by a circular one, and performed ablation about an inch and a half beyond the ruptured portion. After one month the cow could do her usual work.

A cow experienced after parturition inversion of the uterus. Reduction was effected, four or five hours after the inversion recurred; a second restitution followed, and a second recurrence of the inversion. The uterus, now in a state of congestion, was incapable of replacement because of its increased size. Lotions were applied for three days, when a dog fell upon the mass of flesh with his teeth, tore the mucous membrane in several places and caused a fairly abundant hæmorrhage. Inflammation followed, and on the tenth day all hope of returning the tumor being lost, ablation was decided upon after the following plan: The animal being on her feet and the uterus sustained horizontally by two assistants the veterinary made on the superior wall of the organ an incision about six inches long, traversing the thickness of both walls. Between the margins of this opening he inserted a roll of linen six inches long and four inches in circumference, and by means of a tape two yards long, used as a double headed roller, he applied a series of turns very tightly about the pedicle of the tumor; that is to say about that portion of the uterus embraced by the structure of the neck. The ninth day all that portion of the uterus beyond the ligature was amputated. About this time the cow had regained her appetite, the fever had ceased, and a short time thereafter she was able to work.

In a case of inversion of the uterus in a bitch under the care of M. Cros, a ligature was placed as nearly as possible to the uterine neck. On the third day the strangulated tissue was amputated an inch beyond the ligature. There followed very little loss of blood. From the moment of incision the inverted stump of the uterus withdrew suddenly dragging the ligature. A serous flow appeared on the second day; on the fourth day the ligature came away.

Meanwhile the general health of the animal was not seriously deranged.

"There have been published a number of cases of extirpation of the uterus in the cow, the goat, the sow and the bitch followed by complete recovery. Generally the occasion has been rupture of the organ and escape of the intestines in consequence of the uterus being torn by dogs."

M. Chanel has seen the half of one of the cornua of the womb of a sow expelled from without the abdomen, cut off, together with the two fœtuses therein contained. The other fœtuses of the same cornus continuing to develop to the end of gestation.

Mr. President: In the course of my researches in preparing this paper,* I have looked expectingly for the presentation of the same proposition as I have here made from colaborers in the field of obstetric surgery. I

* After writing this article the writer found in the essay of Dr. Harris on the Porro operation in continental Europe, published in the American Journal of the Medical Sciences, in 1880, the following sentences:

"Several other plans [of treating the cervix] have been proposed. * * * (2) to invert the uterus after its evacuation and constrict and remove it by the vagina. This plan tends to complicate the case and increase its dangers, etc."

Had the writer been aware that the suggestion which forms the basis of the foregoing paper had been previously published he would not have prepared it. Inasmuch, however, as the merits of the method proposed are in no wise affected by its having been previously suggested, he has decided not to withhold the article from publication.

Dr. Harris, in objecting to the plan of leaving the pedicle in the vagina, says: "Suppuration within the vagina is not nearly so safe as it is external to the abdomen, where purulent absorption is much less likely to occur, and especially under the dressing of Lister."

There are reasons to believe that Dr. Harris has an exaggerated idea of the danger from this source, for in 63 cases of removal of the chronically inverted uterus by the form of ligature here recommended, there occurred a mortality of only 15 per cent, and if the cases be eliminated in which the patients died from shock, exhaustion, cancer, etc., the result shows a mortality of only 10 per cent. If it were practicable to eliminate the dangers incident to and inseparable from amputation of the uterus *per se*, the element

have been rather surprised to have met no allusion to the method. The germ of the plan here proposed may however be found in the writings of that brilliant obstetrician to whom, more than any other, suggestions for improvement in the operation of cæsarian section are to be credited, James Blundell. In his article on laceration of the uterus occur these words: "Would extirpation of the uterus, *with or without inversion*, be of service in these cases? This question may be answered next century."

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of mortality to be charged to the presence of the stump in the vagina would certainly be small. If deemed necessary, the pedicle within the vagina might be subjected to constant irrigation.

It has occurred to the writer that, so far as he is aware, in performing the cæsarian operations surgeons have not sufficiently availed themselves of their anatomical knowledge and surgical resources in the direction of controlling hæmorrhage from the uterus.

There would appear to be no reason why this hæmorrhage might not be controlled by two skilled assistants, one on either side of the patient.

The uterine artery, it is thought, could be controlled by pressure with the finger backward, outward and upward on the internal iliac artery. The ovarian artery might be controlled by the thumb pressing it backward against the body of the psoas muscle, about on a line with the bifurcation of the aorta.

Pressure upon the vessels should not be made until the uterine incision begun, nor relaxed till the constriction of the cervix has been effected.

Should this method of restraining hæmorrhage during the operation prove successful, the plan of bringing the cervix inverted into the vagina would be greatly simplified, for the uterus could be ablated at the point of election *in situ*, and then, by traction upon wire loops introduced near the incised edge of the cervix, it could be inverted and the clamping wire adjusted. The dragging of the body of the womb through the pelvis and os uteri could in this way be avoided.

EDITORIAL.

FRANK HASTINGS HAMILTON, M. D., LL. D.

Professor Hamilton died at his residence in New York city, on Wednesday, August 11, after a brief illness of two weeks. For the past two years he had suffered from pulmonary phthisis.

He was born in Wilmington, Vt., September 10, 1813. He entered the Medical Department of the University of Pennsylvania, and graduated when only twenty years old. He successfully held professorships in the Fairfield (N. Y.) Medical School, Geneva (N. Y.) Medical College, and the Medical Department University of Buffalo. He was one of the founders of the Bellevue Hospital Medical College, and occupied the chair of surgery in it until 1875.

During his life, and at the time of his death, he held many important positions. In 1881 he was brought prominently before the lay public as one of the consulting surgeons in the case of President Garfield in his last illness.

Professor Hamilton was not only a brilliant surgeon, but a distinguished writer and teacher. His "Treatise on Fractures and Dislocations" is one of the best books on that subject in existence. The third edition of his "Treatise on the Principles and Practice of Surgery" has just been published.

At the last meeting of the Chicago Medical Society, resolutions of respect and condolence were adopted.

THE NEUROLOGICAL REVIEW.

Professor Jewell has again entered the field of periodical literature, having recently established a new journal called *The Neurological Review*. The distinguished success attained by the *Journal of Nervous and Mental Diseases* while under the same editorial management, leads to a confident anticipation of similar success in the present venture. The three numbers already issued indicate the high place the *Review* will occupy in the field of clinical neurology, and the editor promises still better things for the ensuing year, when the work shall have been better established.

LIGATION OF THE VERTEBRAL ARTERIES IN EPILEPSY.

In another part of this issue is a brief abstract of a paper on the above subject, read by Dr. J. L. Gray before the Chicago Medical Society. Several points raised in that article are of considerable interest. The theory of Alexander (*Brain, 1882*) is, in brief, that the operation was of benefit in modifying the circulation by diminishing the quantity of blood sent to the diseased and hyper-sensitive centers. Dr. Gray, in his paper, says that he regards the very free anastomosis existing in the circle of Willis as sufficient to re-establish the circulation in a short time, while Alexander would lead us to think that the complete dilatation of the posterior communicating arteries may require months or even years. In support of his views, Dr. Gray pertinently observes that no evidence of anæmia is observable in the parts supplied by the arteries, immediately after the operation; and further, that were the benefit entirely due to the

impression made upon the circulation, it would be as great in those cases in which the excitation starts in the cortex and is propagated downward as in those in which it originates in some region outside of the central nervous system; but this does not seem to be the case.

Professor Jewell regards epilepsy as essentially a disease of the vaso-motor nerves. He has recommended the tying of the vertebrals, on the ground that the vaso-motor nerves of the co-ordinating center of the brain, which accompany the arteries and are intimately blended with their coats, are thereby cut off. Theoretically speaking, in proportion to the degree to which the vaso-motor nerve-supply of the convulsive centers is cut off, ought the operation to be successful. Guided by these considerations, he has recommended that the operations be done as high as practicable.

In Alexander's operations the artery was ligated at the sixth cervical vertebra. He reports twenty-one cases, three of which have remained well for upward of a year. Nine cases bid fair to be classed as recoveries, though sufficient time has not yet elapsed. Eight were greatly improved.

The operation has been performed, in this city seven times, with one death. Of the other six cases, three are reported, though in not very distinct terms, as having been benefited. One received no benefit (cortical epilepsy), and two are so recent that nothing can yet be affirmed as to the result. In all these cases the artery was ligated between the atlas and the axis.

It would seem, from an analysis of the above results, that the so-called high operation has little to recommend it over that first proposed by Dr. Alexander. But as yet it is cred-

ited with too few cases, and such a short time has elapsed since it was recommended, that we are hardly justified in coming to any conclusions as between the two. It may prove necessary to sever the communication between the superior and middle sympathetic cervical ganglia—theoretically it should—practically it seems to make little difference.

Ross states that obstruction of the basilar artery at its inferior extremity causes paralysis of all four extremities and both sides of the face. Simultaneous obstruction of both vertebrals produces exactly the same effect, while in obliteration of one vertebral the symptoms assume a hemiplegic form.

It may readily occur, in obstruction dependent on arterial disease, that the collateral circulation is with difficulty established, and softening and paralysis take place. But just how an embolism—say from the aortic valves—in occluding an artery could cause different symptoms from a ligature applied in the same situation, is not apparent.

We need more light on this subject, and it would seem a fruitful field for experimental pathologists.

SOCIETY REPORTS.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, June 21, 1886.—THE PRESIDENT, E. J. DOERING, M. D., in the chair.

PROFESSOR F. E. WAXHAM read a paper entitled

INTUBATION OF THE LARYNX AS A SUBSTITUTE FOR TRACHEOTOMY, WITH A REPORT OF 83 CASES.*

PROFESSOR D. A. K. STEELE, in opening the discussion, said that of course the principal interest to the surgeon centers in the question of the performance of tracheotomy in croup or diphtheria. He had looked up some of the older statistics, in addition to those given by Dr. Waxham. The French seem to have led the way in the practice of tracheotomy. Trousseau, in 1858, gave the statistics as about 25 per centum of recoveries, and from later reports tracheotomy does not seem to have gained much. Dr. Solis-Cohen, of Philadelphia, in 1883, recorded some 5,000 cases, and his per centum was the same as given twenty-five years before by Trousseau, about one in four. More recent statistics show some improvement in tracheotomy; for example, Dr. Jacobi, of New York, published 1,000 cases, in which he had a little better success, if he remembered correctly, than those reported by Solis-Cohen. A few days ago he saw a report of seventy-seven cases from the Boston City Hospital, with a

* Professor Waxham's paper appeared in full in our August issue, but the discussion was crowded out by want of space.

recovery of twenty cases, about 25 per centum. In Chicago the statistics, as given by Dr. Waxham, are 306 cases with a recovery of about 19 per centum; these are the most recent statistics he had found. Of course, in regard to the report of cases of tracheotomy, we have to bear in mind a very practical point—that is, that the unfavorable cases are not all reported. The majority of physicians who do a few operations and have not a successful result do not record their cases. In New York city, some twelve years ago, a surgeon reported 67 cases with 13 recoveries. He made operations on 100 additional cases before he had another successful one; so there are curious mixtures and changes in the statistics of different operators.

Another point is that a good many surgeons report as successful, cases that recover from the operation, but that die of some other affection or sequelæ, as the case reported by Dr. Waxham dying from albuminuria. All these cases are reported by tracheotomists as recoveries; but they are not recoveries from the diphtheritic croup. These points must be borne in mind. When we sum up, the statistics to-night would show a recovery of 27 per centum, which certainly seems to be a very favorable showing. In addition to these cases reported by Dr. Waxham, Dr. O'Dwyer has of late recorded 25 cases with a recovery of 24 per centum; taking all those cases into considerstion, the Chicago record is ahead of the New York record by 3 per centum. In regard to the Boston City Hospital, where they had 25 per centum of recoveries, we should bear in mind that those cases presumably have much better surroundings than we have in Chicago, or in general practice. There they have the best of nursing and immediate attention in case any mishap oc-

curs, which in some cases in private practice might go unnoticed for many hours. With the favorable surroundings so far as the operation and the after-treatment are concerned, the reported recoveries of 25 per centum are as favorable as we could expect.

Intubation is a comparatively new operation, but with the improved tubes—as by enlarging the calibre of them (for a serious defect in the construction of these tubes has been that the lumen was too small)—the percentage of recoveries would be increased. There would be less danger of rolling up the detached pieces of matter, and he thought that expectoration would occur more freely. It is supposed to be necessary to have the tube extend down near to the bifurcation of the trachea, so as to prevent the curling pieces of membrane blocking up the opening, but he thought they were longer than is necessary. The principal obstruction, we know, is at the larynx; the membrane below the trachea is thinner, smaller, and is not likely to curl up in this way. Theoretically the tube should be long, practically it might be shortened, and with the improved tubes we will get still better results.

A point in favor of intubation over tracheotomy is the rapidity with which it can be done, taking only the fraction of a minute to insert a tube in the hands of an experienced operator. We might also take into account the greater comfort of the doctor after the operation; the feeling of security with the laryngeal tube. He is constantly in dread after tracheotomy, watching and waiting, and seeing the little patients upon whom he has operated die one after another. Then the relief from dyspnœa seems to be quite as great after intubation as after tracheotomy. The relief from urgent symptoms is just as marked with the introduction of the laryngeal tube as with tracheotomy. In case we find intubation does not afford per-

manent relief it is no bar to tracheotomy subsequently, although where intubation does not relieve dyspnœa, tracheotomy will not relieve it; where stenosis is not relieved by the introduction of the tube, it does not relieve the dyspnœa.

PROFESSOR W. E. CASSELBERRY said his experience either with intubation or with tracheotomy has not been very extensive, but from it and from what he had gleaned from the literature of the subject, including the valuable paper presented tonight, he was very favorably impressed with the operation of intubation. The most favorable statistics of tracheotomy are those of not only the French, but more particularly of the large hospitals of France and Germany. In these institutions they have the fullest command of the patients in every way; the greatest attention can be paid them and the operation can be and is performed early. The most favorable statistics are those of Plenio (Königsberg)—and of all the cases that were taken to the hospital but five escaped tracheotomy, showing that almost all were subjected to the operation. The case of Dr. Ingals, in which the membrane was removed from one of the bronchial tubes, was a most brilliant one, but then intubation does not prevent tracheotomy from being performed afterwards. The forceps for the removal of the membrane through the mouth, which the author has exhibited this evening, is new; he has not much confidence in it, but perhaps it may be of value. In reference to the length of the tube, somebody has proposed that it should be shorter. He thinks it is the length of the tube which has rendered this operation successful over the operation of some eighteen or twenty years ago. It was invented by a French surgeon at that time, but the tube was only about three-fourths of an inch long, sufficient only to reach into the larynx, where it excited irritation, and the operation was discarded as of no value; so that he thinks in the

length of the tube we have an important feature. In reference to the introduction of the tube, if it is possible to practice on the cadaver it would be of great value; a minute is a long time when you are introducing a tube into the larynx of a child who is suffocating; you gag the mouth, introduce the forefinger as a guide to the larynx, follow it by the tube; the child stops entirely his feeble respiration, in a few seconds he becomes black in the face, and you are very anxious either to get the tube in or your finger out. If we bear in mind the instructions of the author of this paper to pass the tube under and not over the forefinger as a guide, no doubt we will be successful. It should be remembered that the curve into the trachea is a right-angled curve, so you must turn acutely and not obtusely or you will enter the œsophagus and not the trachea. The food of the patient is a most important point; when the tube is in liquids will frequently run into it and excite irritation.

DR. A. B. STRONG said: Before coming here he was prepared to indorse this operation to a great extent. He did not suppose the statistics were so favorable, but he was glad to find they are so. He has had quite a number of cases of intubation and of tracheotomy, and he must say that he much prefers the introduction of the tube. However, not every case is adapted to the intubing. He thinks there are many cases where tracheotomy would be far preferable. We can feed a little patient after tracheotomy much better than after intubation of the larynx; to introduce a stomach tube would require the attendance of the physician several times a day. He has not yet given a fair trial to introducing the food into the rectum. He would not want a little patient that had suffered for three or four days before the operation to go without food. He likes to feed his patients well, and certainly would not wish to starve

them. There are three or four cases that have given him a good deal of information. The operation is new; we do not know all there is about it. One of the first cases that he had of true diphtheria, where intubing was done, was a little boy 4 years of age, taken sick five days before he saw him. The physician in attendance had given the child up, and Dr. Strong was called in. The little fellow was as near dead as any patient he had seen, but he would not have recommended tracheotomy in that case. The neck was badly swollen. The patient was cold, clammy, pulseless and cyanosed, with his pupils widely dilated and apparently just on the verge of dissolution, mainly from profound blood-poisoning. He introduced the appropriate tube, and much to his own surprise he nearly strangled him; indeed, for a moment he thought him dead. He drew the tube out and the child breathed a little better. It occured to him that he might have crowded the membrane down. He introduced the tube again, with the same result; he was nearly strangled. He tried a smaller tube, but each time the tube went in the child nearly died. He laid him on the bed and surrounded him with dry heat. He gave him brandy hypodermically. He did not suppose the child would live more than an hour, but to his surprise he received a message by telephone that he was alive and doing well, ten hours afterward. He went to see him and found him with a good color, taking considerable nourishment. He called again in six hours just in time to see the child die. He had the privilege of post-mortem, and found exactly the condition of affairs he had anticipated. At the lower portion of the trachea he found a complete cast of that membrane crowded down. This case had been going on about five days when he saw it, and this membrane had been loosened in the meantime and so crowded down.

Another case was of a good deal of interest. A little girl eight years of age had a mild attack of diphtheria four days prior to his seeing her. Two days before he saw her the larynx first became involved, and gradually grew worse. The case was one of the most favorable for operation that he has seen. He introduced the largest sized tube and it remained in position for three days, and within 24 hours the lungs cleared up very nicely; at the end of three days and two hours the tube was removed with comparative ease, and he noticed that the child did not breathe as freely as he supposed she would. He remained about an hour, and during that time dyspnœa set in and the child nearly choked to death. He put in the one next in size and the symptoms were instantly relieved. The child wore that tube two days, when it died from bronchitis.

That case gave him this idea: the tube first introduced was as large as the parts would readily take in—it required a little force to introduce it—and it occurred to him that the tube was larger than was necessary. It remained there three days and two hours, squeezing the blood out from these parts, and when it was removed the sudden reaction caused the œdema of the larynx. The child wore that tube five days and a few hours, and until the last twelve hours of its life was getting along very nicely, except that it did not take the amount of nourishment he considered necessary. This operation is brilliant, and has a future before it, and he can heartily endorse it to-day. He is perfectly willing to try it, and would prefer, in case of one of his own children, intubing the larynx to opening the windpipe.

PROFESSOR CHRISTIAN FENGER said: The subject is a most important one. As to the history of the operation, he would say that it is not a new one. A French surgeon, Loiseau, invented it in 1858, and to him belongs the idea. The instru-

ments were, in the principle, about the same which we use now; there have been modifications in details only. Tubage was tried in France by Gros, but seems not to have found favor, although Bonehut recommended it without having used it himself. It was tried in Vienna by Weinlechner, who recommended it. It was condemned by Steiner and Ziemssen, and given up again. In reference to what was said about patients not swallowing at all for the first twenty-four hours, it seems to him it would be difficult to keep little children from drinking milk, or water perhaps, milk anyway, because they are always thirsty. There will thus be danger from foreign body—pneumonia (Schluck pneumonie). It might be that feeding bottles will obviate that danger. A second point is this: He saw a child treated by intubation die from loosened membranes closing the bifurcation. Whether the membranes were entirely loose or not, or loose above and attached below, is not materially important. The case convinced him that he would have felt safer with tracheotomy, because loosened membranes can be reached easier through the tracheotomy tube than through the larynx. As to the statistics, it is quite certain that the tracheotomy statistics are a little better than have been given here to-night. In the large hospitals in Germany the recoveries reach up, in the last few years, to 31 per cent. At the same time, when intubation shows 27 per cent, that is in itself reason enough for a trial. All these points are not exactly exclusively in favor of intubation, but like Dr. Strong, he should first try the tube, if it was his own child, and watch the patient incessantly, with the tracheotomy instruments on the table to be ready at any time when needed to resort to tracheotomy.

PROFESSOR F. O. STOCKTON was in favor of intubation.

PROFESSOR R. G. BOGUE said that there is much to recom-

mend intubation he believes. The testimony we get is certainly enough to recommend the operation and to establish it as a practical procedure and one worthy of trial. It affords probably as much relief for the urgent symptoms, the one for which tracheotomy would be resorted to, as tracheotomy would; and the length of time that the tube is to be worn will be shorter than the tracheal tube. These are reasons why it should. From the pressure of the tube upon the membrane the presence would be likely to cause some disintegration of the membrane, and in that way the membrane would be taken away or gotten rid of sooner than without the pressure. The only objection—at least the one which occurs to him from what little he has seen and what we hear—is the matter of fluids passing through the tube into the trachea and into the respiratory passages while attempting to feed the patient. That is an annoyance and probably a detriment. It also, he supposes, will deter children from trying to take fluids. Little children soon learn to avoid things which hurt them, and he should think that it would be a factor in preventing the free feeding of children. Now it may be that the introduction of fluid into the air passages may not be harmful, for as recently as that day he saw in some report from New York the recommendation that in case of tracheotomy, where there is obstruction below the tube, to pour fluid, by teaspoonful, for instance, into the tracheotomy tube, letting it run down into the air passages, for the object of liquefying and softening the membrane and getting rid of it in that way. That, he thinks, is recommended by Dr. George F. Shrady, who had practiced it recently with apparent benefit.

The question of introduction of fluid into the air passage may not be a tangible objection. But we would perhaps prefer to select the kind of fluid we would put into the trachea

instead of milk or beef tea, or anything of that kind. The operation of tracheotomy has been resorted to for a great many years, with varying success by different operators and in different localities. Trousseau years ago reported his success as about one in three, or three to four, from a very large number of cases. In the cases we have heard this evening, as compared one with the other, tracheotomy hardly holds its own. The number of cases in tracheotomy no doubt are not all reported, but a fair proportion of them probably have been reported. While tracheotomy is certainly of great benefit, and has proved itself to be such in this class of diseases, it is subject to its disadvantages and annoyances; but so also has intubation its annoyances, both to the patient, the friends and the doctor.

PROFESSOR C. T. PARKES said he had nothing but words of commendation as far as Dr. Waxham is concerned, for his persistence in presenting this method of O'Dwyer to the profession of this city. He himself has nothing to say about intubation, having had no experience, and never having seen a tube used. He has had a little experience in tracheotomy, and so far as his personal experience goes he will stick to that until he has reason to change it. His experience extends over thirty-one cases of tracheotomy. He had the honor to report to this society on previous occasions the first fifteen cases; eight recovered and seven died. He has collected the names and residence of sixteen more, and of these ten have recovered and six died. That is a pretty fair showing. He cannot explain, and does not pretend to explain this percentage of recoveries. You will find in the literature of tracheotomy throughout the world that some operators have good fortune in that respect. He does not think it an unusual or peculiar fact that the doctor relates about relief given to the patient

when you open the trachea after stenosis; cases in which the patients are unconscious, black in the face, and are revived by the introduction of the laryngeal tube; such a result is to be expected. He noticed by the report that very few, if any, of these cases recover after intubation. He knows he has seen just such cases recover after tracheotomy. He has never had any trouble from the swallowing of fluids or food of any kind. He has seen the fluids come out of the opening of the tube, and has had the physician in charge reporting that we had unfortunately made an opening in the œsophagus; those cases have never given trouble, and in a few days subsided. There is one peculiarity about these cases of intubation, that Dr. Bogue has explained, the pressure of the tube causing an early disappearance of the membrane. There have been no cases that he has seen in tracheotomy where the tube could be removed under six days. In two cases it was three or four months before the tube was removed. He has never seen the trachea opened, so far, without seeing false membrane come out of it. If he were enabled to remove the tracheotomy tube inside of six days or a week, he should think that to be a case in which no membrane was found in the trachea, and one, in all probability, in which if he had waited a few days the patient would have gotten well without any operation. There is something peculiar and interesting in the ages of these sixteen cases, the youngest being 3½, the oldest 37 years of age. He thought the cases in which stenosis has been complete, and required an opening of the trachea, have been very few in the adult. One of his operations was upon a woman after she had been sick some four or five days with a bad case of pharyngeal diphtheria. At the time he saw her she was absolutely suffocating, and he was called for the purpose of performing tracheotomy. He did the operation under very poor sur-

roundings and yet the patient recovered. The tracheal opening became diphtheritic. Another case was 32 years old, and the patient died on the table. This accident has happened in quite a number of cases. He never had any trouble with the children, and certainly expected less with the adults, as in the latter the operation is much more simple than in the child. This patient stopped breathing before the trachea was reached, and after it was opened it was impossible to restore respiration. As far as he is concerned, he can say nothing about intubation. He don't know whether or not it is such an easy thing to intube the larynx. He thinks he has cognizance of three cases not in the doctor's list that proved fatal, in which some difficulty was met. One three years old died the day after. One seven, in which no relief was given, as the membrane seemed to be pushed ahead of the tubes; and one in which, no relief being given, the attempt to remove was complicated by the child swallowing it and being buried with the tube in its stomach. Another, a young lady seventeen years old. This patient recovered; she was relieved immediately after the introduction of the tube, and rested very comfortably until the next day, when she complained of a pain in her stomach. In the evening of that day she passed the tube from the rectum. He allows others to judge of the necessities requiring its use, and so don't know that he can agree with these gentlemen and say the operation is simple. We know what tracheotomy amounts to, and he is sure he would not feel right about it, that he should be haunted with the idea of not having done his whole duty, if he left a child seven years old go without doing tracheotomy where he felt satisfied after this tube was introduced there was no relief given.

He thinks tracheotomy will always have a place. He has been asked many times how he came to have this record of tracheotomy, that he thinks it is due him to say one thing more; he does not know how to explain it. He believes no other operation for tracheotomy should be done but the high operation. The trachea should be opened at the highest ring, and if necessary divide part of the cricoid, as he has done, or all of it. Certainly the after care has a great deal to do with the recovery, and he does not believe there are any persons so wanting in intelligence but if you give them instructions carefully they will carry them out. So far as his experience goes, the surroundings have made no difference, even if it be a house of only one room with the whole family living in it and several other animals besides. He thinks the room should be kept at a temperature above 80; there should be no attempt to fill it with moisture; the room should be so hot as to be decidedly uncomfortable for all the friends for the first twenty-four hours. During this time —twenty-four hours—the inner tube of the trachea should be removed every hour, whether the patient seems to need it or not, because that is the time when the deep-seated trouble in the organs below starts. After that time he does not believe the tube should be removed oftener than seems absolutely necessary, and he does not believe that mucus can be prevented from drying by the introduction of foreign bodies. Every time the tube is removed it should be reintroduced damp, or wet in a mild solution of soda; and occasionally, without taking out the inner tube, drop into the trachea a few drops of this same fluid, so as to keep the end of the tube as moist as possible. No foreign bodies of any kind should be introduced into the trachea after you

are quite certain all the pieces of membrane have been detached and removed at the time of the operation. The introduction of such an innocent little thing as a feather or sponge, he is satisfied, does more harm than good. He is willing to admit that in one case which showed every sign of recovery, the tube was moist and the cough was moist, and he had every reason to believe it would get well, but owing to over-anxiety he kept poking feathers into the trachea and had the friends do the same, until an inflammation of the trachea proper was produced around the tube, which he is satisfied was the cause of the fatal issue. He does not think there should be any interference; the least possible interference is the best.

DR. H. T. BYFORD said he wished to call attention to one fact; that is, in the statistics of hospitals tracheotomy shows about as favorably as intubation, although in private cases the safety, simplicity, and absence of formidableness of intubation makes it already the popular operation. As he has said before this, tracheotomy is an operation for hospital practice, where the difficulties can be overcome, and where its just claims for precedence in particular cases must always obtain consideration.

PROFESSOR F. E. WAXHAM, in closing the discussion, said he believes every tracheotomist will entertain an opinion in regard to tracheotomy according to the success which he has attained. If a physician has saved every patient upon whom he has operated, he will feel that the operation is good enough, and will be perfectly satisfied; if he has saved a large proportion of his cases he will be loth to accept anything new; but the great majority of physicians, who have either met with unvarying failure or inferior success,

will have a poor opinion of the operation. English writers seem to be losing faith in tracheotomy, for Holmes, in his "System of Surgery," says: "English medical men seem very generally to incline to the opinion that the operation, if not to be recommended, is at least justifiable, but to be successful it must be performed at a very early period of the attack." Referring to Professor Parkes' remarkable record of tracheotomy, he can not help feeling that his cases could not have been so unfavorable. He cannot believe that he had many young infants to operate upon. He would like to ask the age of the youngest patient?

PROFESSOR PARKES: Three and a half years.

PROFESSOR WAXHAM: That explains why his record has been far more successful than that of many physicians, and he believed that if tracheotomy were performed upon every case without reference to age, condition, or type of disease, we would not save more than one out of every ten or twelve. Many physicians select their cases; indeed, he knows of some who *will not* operate upon a child under three years, and of others who will not operate upon diphtheritic cases on account of the known fatality occurring after tracheotomy in these cases.

In regard to the difficulty of performing intubation, he would say that any of you who attempt the operation upon a child without practice upon the cadaver will certainly be sorry for it. He has known of four physicians who have failed completely. In regard to the patient to whom the last speaker referred, the young lady with the tube in her stomach, that case was not in his record, for the patient was not his.

PROFESSOR PARKES has stated that after tracheotomy, if

he were able to remove the tube in less than six days he would have concluded that there could have been no membrane within the larynx, and that if he had waited a few days longer the patients would have recovered without the operation ! A natural inference would be that in these cases of intubation, because the tube has frequently been removed on the third, fourth or sixth day, that there could have been no membrane present and that the operation was unnecessary. In reply he would state that in every case coming under his observation false membrane has been expelled when the tube was introduced. The reason why the laryngeal tube can be removed earlier than the tracheotomy tube is that more or less membrane is detached when the tube is first introduced, and second, the pressure of the tube and the frequent coughing assists in dislodging the membrane; while after tracheotomy little or no air passes through the larynx until after the removal of the tube, and there is nothing to cause the dislodgement of the membrane.

In regard to feeding the patient. Many of his patients have taken abundance of nourishment without difficulty. Occasionally, however, there will be one that will not take a sufficient amount. It will depend a great deal upon the size of the tube. If we use a tube larger than is appropriate for the age of the patient, it will not always fit perfectly into the cavity of the larynx, and consequently the epiglottis will not close accurately over it. In a case such as Dr. Strong has referred to, where the membrane is pushed down ahead of the tube, the trachea forceps would be very useful in removing it.

There are a great many dangers from tracheotomy that are never met with from intubation; but we rarely hear of

them. He had learned of one physician who attempted a tracheotomy on a child four years old. Cutting down hastily he severed large blood-vessels, and losing his head at the sight of the copious hæmorrhage, at once sewed up the wound, while the child, almost with his last breath, wanted to know if they were going to cut him any more. Another physician, in cutting down hastily in order to open the trachea, missed it, and accidently severed the carotid artery. Indeed, the history of tracheotomy is replete with horrors, but we do not hear of them. In the hands of experienced surgeons, who are cool and collected, the operation may be a simple and safe one; but in the hands of the inexperienced and the nervous, performed, as it frequently is, in the dead of night, it then becomes a formidable, yes, a dangerous procedure. Intubation, on the other hand, can be performed quickly, in a very few seconds, and without the dangers attendant upon tracheotomy.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, July 6th, 1886.—THE PRESIDENT, E. J. DOERING, M. D., in the chair.

PROFESSOR CHARLES T. PARKES reported a case of urinary fistula of twelve years' standing, from gunshot wound of thigh. The track of the bullet had been such that the urine could escape through the wound on the thigh. Several unsuccessful attempts had been made to close the fistula. While examining the bladder with a sound, Professor Parkes discovered a stone. Lithotomy was performed, and now the patient urinates *per urethram*, and the fistula is closing. The calculus

was the size of a pullet's egg, and the nucleus consisted of a piece of bone. Professor Parkes also exhibited a thirty pound multicular ovarian cyst with colloid contents, which had been removed without enlarging the original incision. He also exhibited specimens of hydatids of the abdomen, connected with liver, spleen and intestines. Exploratory operation had been made, but the hydatids were so numerous, large and adherent that they could not be removed. The patient died of exhaustion. One hydatid of the spleen measured twenty-three inches in circumference.

PROFESSOR W. T. BELFIELD said, the case which particularly interested him is the one in which the stone was found in the bladder, and he congratulated Professor Parkes on his discovery of that stone, because the case had been a reproach to surgery for twenty years. He had once seen the patient, who was kind enough to perform for his benefit, and threw a stream some little distance through the fistula in the thigh. Probably the stone was overlooked from the fact that it was situated pretty high up, attached to the upper wall of the bladder. Recently he had a case in which stones weighing two and one-half ounces had been carried by the man for eight years; he had been sounded a number of times, once under chloroform, but with negative result every time. In that case he found one of the stones attached to the fundus of the bladder, the other ensconced behind an enlarged prostate.

PROFESSOR R. G. BOGUE said: The cases presented are of a great deal of interest. Probably the most interesting feature of the case of stone in the bladder was the discovery of the offending body and its removal. The strange paths that bullets take in their course through the body, or a portion of it, were found to be so various by those who have had opportunities for observation during the war. The fact of this bullet passing

into the side of the thigh, wounding the bladder and passing out through the perineum, was not so very strange; but the repair which took place in the track of the bullet, the lodgment of the large fragment of bone, such as we see here, within the bladder where it remained so long a time without giving a great deal of trouble, is somewhat singular. The long experience that the man had in seeking relief, or cure, without avail, and the probably accidental discovery of the real difficulty and its remedy by removal of the stone, renders the case one of a a good deal of interest. The case of hydatid cysts is also of much interest. Hydatid cysts are supposed to be comparatively rare, although in hospitals where a great many post-mortems are made they are frequently found. In many instances they give so little trouble during their growth that they are only found upon post-mortem examination as an accidental affair, the liver being the seat of the great proportion of instances of their development. In looking over the first volume of the catalogue of the museum of St. George's Hospital, of London, he found that there are eighteen specimens of hydatid cysts mentioned, one of the lungs in a lad who had had chronic cough for some two years, which subsided after he had expectorated an hydatid cyst. All the other hydatids developed from the liver; one was a case of multiple cyst where a large cyst had developed upon the superior surface of the liver, causing absorption of the diaphragm, entering the thoracic cavity and becoming adherent to the right lung; the abdomen was quite filled with tumors attached to the omentum, the spleen, the kidney, and the under surface of the liver, and some to the peritoneal surfaces. In this case there had been, no doubt, a ruptured cyst, as the young man had fallen while at play, and the accident was followed by severe symptoms of prostration or collapse, with recognized peritonitis, from which he finally

recovered, but afterwards died of erysipelas. The tumors in the abdomen had been diagnosticated some two years previously, but the death was from a cause other than that connected with the growths themselves, and the revelation upon post-mortem was that of extensive hydatid disease, the greater part being connected with the liver. All of the other instances of hydatids were of the abdomen, connected with some portion of the liver, either within the organ or upon its surface, so that in all of these eighteen cases the specimens were from the liver or within the abdomen, having the liver for their primary seat, with the exception of the one in the lung.

PROFESSOR J. S. JEWELL said he had been deeply interested in listening to the cases reported by Professor Parkes, but especially in the case of urinary fistula. He thought in such cases as stone in the bladder, as well as all others, there should be the most thorough and careful investigation. When one undertakes to explore the bladder for stone, cases like this ought to be held in mind. He suspected that in the case in question Professor Parkes was pretty nearly giving up the examination with the sound when he made the last sweep that brought the stone to light. He was impressed with the necessity for more thorough work than is usually given in the matter of diagnosis. He was becoming more careful every day, as a matter of habit and duty. In studying cases, apparently the most simple, one often finds, where we least suspect it, remarkable things. He throught there was toomuch hap-hazard diagnosis to produce the best work, and this case is an example of it; for, if Professor Parkes could find the stone, others should have done so.

PROFESSOR C. T. PARKES, in closing the discussion, said: Professor Jewell is correct in his supposition that it was by a mere accident that he found this stone. Perhaps he had neg-

lected to say, in regard to the hydatids, that there is no tissue in the body that is free from this parasite; there are only certain places in the body where it is found with the absence of an adventitious sac, but some, especially those found in the brain, are usually cysts with but two layers, the terminal membrane and the external layer. There are many things that seem to refer their formation and development to the circulation of the broad cells through the blood, and there are many things that seem to show that this cannot be possible.

DR. HENRY T. BYFORD read a paper entitled

THE MECHANICAL TREATMENT OF RETROFLEXION OF THE UTERUS.

The means for correction of the retroversion are of four kinds:

1. Those which permanently fix the fundus in front of the pelvic axis;

2. Those which draw or fix the os back of the pelvic axis;

3. Those which place a barrier or obstacle to the forward displacement of the os and cervix;

4. A combination of two or more of these methods.

The fixation of the fundus forward has been done in four principal ways:

1. By the Alexander operation, in shortening the round ligaments. It was suggested by Alquié, recommended by Aran, experimented upon on the cadaver by W. A. Freund, and successfully performed and established as a therapeutic measure by W. Alexander.

2. The stitching of one or both round ligaments to the abdominal walls; as has been done with permanent success by Wm. H. Byford while performing laparotomy for another purpose.

3. The stitching of one or both of the broad ligaments to the abdominal walls; as successfully done by Koeberle and

Schroeder, and perhaps others, during laparotomy for other pathological conditions.

4. The stitcing of the uterus to the abdominal wall, as recommended by Mueller and Tait, and performed by Heywood Smith by an especial laparotomy.

The drawing or holding of the cervix back has been accomplished by uniting the cervix to the posterior vaginal wall by adhesive inflammation or by operation, as recommended by Loewenthal. But the most available method is by the use of pessaries of the Hodge class, such as the Albert Smith, Thomas, Emmett, Hewitt, Hauks, Noegervath, Schroeder, Gehrung, etc., which hang up the cervix posteriorly and drop the fundus forward, and thus supplement or supplant the posterior suspensory ligaments. The modifications of the Priestly instruments, Cutter's, Lazarewitsch's, Thomas's and Scott's, are also useful. H. Marion Sims's new retroversion, Hodge and stem pessary may be classed here, although original in action. Peaslee's, Mayer's, Dumont-Pallier's, the inflated rubber rings and bags, etc., are to be taken out oftener than to be put in.

The cervix may be kept back by lubricated cotton plugs, changed every day, or by pessaries such as the Courty, the Gehrung retroversion and the author's new instrument, which consists of a thick crescent held in front of the cervix by being attached to arms which work on the lever principle. It looks something like a Thomas retroversion pessary bent so as to come in front of the cervix. It has been made to fulfill the following six requirements :

1. To place the uterus in a normal or nearly normal position ;

2. Not to interfere with the natural supports ;

3. To afford an elastic or yielding support;
4. Not to interfere with the use of a speculum;
5. Not to interfere with the marital relations;
6. The patient is able to introduce and remove it.

The Hodge varieties are generally faulty as to requirements 1, 2 and 6.

The patient in most instances has but to introduce the neck and shoulders of the instrument, assume the knee chest position and push it into place. It allows the vagina to collapse, and does not press injuriously upon the uterine supports.

Especial contra-indications to this form of pessary are: tenderness or induration in the vesico-cervical region, decided retroflexion, an insufficient projection of the cervix into the vagina, and an unusually short anterior wall of the vagina.

Especial indications are retroversion with subinvolution after abortion or labor, or with bilateral laceration of the cervix in which the traction of the other forms acts hurtfully, a lax vagina, post cervical tenderness.

In preparing a subinvoluted uterus with bilateral laceration and eversion but without retroversion, it is exceedingly useful for lifting the uterus off the pelvic floor. Lateroversion may be corrected by raising one shoulder of the instrument.

Dr. Byford also described and illustrated by charts *a new operation for raising the perineum and pelvic floor* in such a manner as to form an obstacle to the forward displacement of the os and cervix, and at the same time strengthen the vaginal connective tissue attachments. The denudations run across the muscular fibres of the levator

ani in such manner as to enable the operator to shorten those fibres and thus lift up the perineum, posterior vaginal wall and pelvic floor, to the greatest possible extent with the smallest loss of tissue. A transverse strip is denuded just posterior to the fourchette or carunculæ, and a narrow triangle with its base at the posterior commissure, or behind it, and apex in the posterior vaginal wall, made to cross it. This makes a sort of star whose angles are sewed up, in the form of a cross, the transverse strip coming together as a transverse line, the triangle in a line at right angles to it and passing up the posterior wall of the vagina. Sometimes the vulval wedge or base of the triangle is entirely left out, and sometimes represented by a nick in the fourchette ; and sometimes the apex of the triangle is represented by two lateral strips passing to either side of the rectum, the latter for the purpose of getting at deeper fibres of the levator ani.

The size of the different parts of the figures must be determined by the case, and are usually very small in those who may be expected to bear children afterwards. The denuded areas must sometimes be altered so as to remove cicatrices and repair particular injuries, the principle of the operation being to produce a natural elevation and condition of the parts, instead of constructing an artificial or unnatural body or cicatrix. In cases of unusual difficulty the uterus should be anteverted and the anterior vaginal or cervical wall be united to the posterior vaginal wall where they meet, and the operation for raising the perineum and pelvic floor then performed.

The Fitch and Studley, Schultze's figure eight and sleigh pessaries, the Hurd, Fowler, Fritsch and Woodward are

cited as examples of tractions behind combined with pressure in front of the uterus. Many of them are faulty in that they produce a rigid fixation of the cervix—and such should be avoided. Other combinations are mentioned.

The author recommends the mechanical treatment of retroflexions chiefly as an aid in their treatment, and would especially keep back operative measures as adjunctives, palliatives, last steps or resorts, or as the least among evils.

DR. H. P. MERRIMAN said he had been very much interested in the paper, which he thinks is a valuable one. It seems to deal not merely with the subject of pessaries, but with the various means of support in the case of retroversion. He believes that a great many physicians, when they find a retroversion, without stopping to consider its cause, at once feel that it is necessary to employ a pessary, and in a great majority of instances the use is followed by failure to relieve. We all know that retroversion of the uterus has more than one cause; it is due in a great many cases to pressure from above, to weight within the uterus itself, as in the case of a fibroid tumor; the use of the pessary in these cases is of no value —it is only when there had been a weakening of the supports. In the case of weakened ligaments the pessary is of value as a temporary expedient. When the retroversion is due to a weakened vaginal support, which is true in the great majority of cases, for when we find the perineum ruptured, even partially, we are going to have, sooner or later, a retroversion. We find pessaries valuable in these cases, though, as a rule, we should not depend upon them permanently, because we need to restore the vaginal supports by some kind of operation, such an operation as restoring the perineum and curing a rectocele or cystocele, or by the general operative proced-

ures Doctor Byford has mentioned. He believes that what we need in nearly every case is to examine the vagina and restore it to its proper shape and position. The uterus is retroverted because the vaginal support is gone, the wall of the vagina has become relaxed and is letting down the uterus, and we want to restore that wall of the vagina. If there has been a ruptured perineum, restore the perineum; if there has not been, the uterus, and by keeping it in place for six months or a year regain the support of the rested vagina. This will be done in a little different way from what Dr. Byford has suggested. We have got to fit something to the vagina that will extend the posterior wall and push up the cul-de-sac back of the uterus. We cannot do that where there is tenderness, or where there is a tumor; but where there is not, and it is merely a simple retroversion, then it will be necessary to fit the pessary to the vagina, and have it fit in such a way as to elongate and support the vagina in a natural shape. It always distresses to hear men speak of fitting a pessary to the uterus. He does not believe it should be fitted to the uterus. It should be fitted to the vagina: the object is to restore the vagina to its natural position, and we must choose a pessary especially adapted for that purpose, and it should lie easily in the vagina.

PROFESSOR WILLIAM H. BYFORD said he came here with the determination of not speaking upon this subject to-night, because the scope of the paper is so great that if he were to undertake to comment upon half the points it would take too long. He believes the principles of the paper are correct for the treatment of this form of displacement of the uterus, especially the one of acting upon the cervix. His impression is that in retroversion of the uterus there is stretching of the utero-sacral ligaments until they are relaxed, and we find con-

nected with it relaxation of the vagina, which he thinks is more frequently the consequence than the cause.

DR. FRANKLIN H. MARTIN asked Dr. Byford what advantages he claims for his pessary over the German sleigh pessary? If the fulcrum of this pessary is as indicated in the large diagram, situated at a low point on the posterior vaginal wall, how is he going to get any support for his fulcrum in a case of lacerated perineum? His illustration represents the fulcrum resting very low in the vagina, and it would have no support if the perineum is even partially lacerated.

PROFESSOR T. D. FITCH said: Dr. Merriman thinks supports for the uterus are abused, and he agrees with him in that opinion. They are abused because practitioners do not take the trouble to enlighten themselves with regard to the use of these mechanical supports, but when they get a case that requires a mechanical support they go ahead thoughtlessly to adjust a pessary of the latest device to support a displaced uterus. If from different causes the uterus has become displaced, do not the uterine ligaments become weakened as the result of that displacement? You never have a case of displacement that the uterine supports do not become weakened and relaxed, and can you tone up a muscle or a ligament that is placed upon the stretch to its utmost capacity, by any means, while in this tense condition? It is impossible. We must assist those ligaments to regain their tone by these mechanical supports, relax the ligaments, give them rest, and then by local and general treatment give them tonicity. Having done this, you can remove your artificial supports. He also fully endorses what Dr. Merriman says with regard to fitting the pessary to the uterus. The pessary should conform to the normal form of the

vagina, and that is why we have to have this flexible material so that we can bend them by heat and make them fit the different shaped vaginæ. He does not approve, as a rule, of the principle of leverage. And that is why so many physicians fail in the use of Hodge's pessary; the leverage is too great. The pressure is so great in using this leverage that abrasion occurs, and laceration and cutting through the tissues. Pessaries should never be fitted in such a way as to produce abrasion, laceration or cutting through the tissues. They should not press hard; they should distend the vagina to its normal length, especially, not its normal breadth, and this can be done without much pressure where the uterus is replaced so that the fundus falls forward so as to be in front of the transverse axis of the uterus at the junction of the cervix with the body. If it is thoroughly replaced, then there is not much pressure when the pessary is introduced. It requires little force to hold the cervix back, and he believes in the majority of cases that here is where the general practitioner fails, viz.: in getting the fundus thoroughly forward, and the uterus replaced. Many times it is half raised up and the pessary presses against the body of the uterus so hard that it will imbed its whole thickness in the body of the uterus, producing inflammation.

He has frequently held the sound in the uterus and held the uterus up thoroughly anteverted, or thoroughly at right angles with the vagina, and introduced the pessary over the sound so as to secure thorough replacement of the uterus. He believes in the use of the pessary, not only as a support to the uterus, but as a splint to the vagina; for if the vagina is kept in its normal position the uterus will necessarily be kept in its natural position. The ideal pessary, in his opin-

ion, is the pessary of Hodge. Emmett's pessary will fit more vaginas than Hodge's or Smith's, the latter differing from Hodge's in that its vuval extremity is narrow instead of broad; Hodge's is broad, while Smith's and Emmett's are both narrow at the lower extremity and are supported by the walls of the vagina. Emmett's is much better than Smith's, is much larger, and therefore much less liable to press too hard upon tissues. The pessary of Dr. Byford, which he has introduced to-night, is the form which Professor Fitch has improvised extemporaneously for himself, and used in several cases. He had six cases where the tissues in the posterior vaginal junction were so sensitive that it was impossible to use a Hodge, Smith or Emmitt, and he took the ordinary pessary of Hodge or Smith, and bent it in the form of a Byford pessary, and found he could use it where he could not use the others. There is an objection to placing this pressure upon the anterior surface of the cervix with a firm, unyielding instrument, and he does not believe that Dr. Byford's pessary will entirely remove that difficulty. He has stated in his paper that there is, in a great many cases, an absence of the anterior lip of the cervix uteri; there is not sufficient of it to be received on this instrument and to be held; it slips off and down in front of the instrument. This is not the only objection. He has found that while the pressure is brought upon the anterior surface of the cervix by the edges on his instrument, it so interferes with the circulation that the anterior lip will become swollen and œdematous. In his instrument there is no ring for the cervix to become imprisoned upon; this is certainly a thing much to be desired where there is an ulceration or laceration existing. If the pressure could be

divided between the posterior vaginal junction and the anterior surface of the cervix, the œdema would be much less than where the whole uterus was held up by the pessary. These pessaries, Byford's and his, are certainly very strongly indicated in cases where there is great tenderness in the cul-de-sac. A prolapsed ovary with a retroverted uterus may fall down into the cul-de-sac of Douglass and no pressure can be borne there at all, and in such cases the only pessary that can be used with success is one that brings the pressure to bear upon the anterior surface of the cervix uteri.

PROFESSOR SARAH H. STEVENSON said she would like to ask how to treat cases in which the fundus lies high and in which the pressure upon the surface has no effect whatever. Where the fundus is low there is no difficulty. It is very easy to cure that sort of retroversion, but where the fundus is high she does not know how to treat the case.

DR. HENRY T. BYFORD said, in closing this discussion, he thinks it is wrong to say that pessaries are fitted to the vagina; they may be fitted either to the vagina, uterus, or pelvic floor, or all three. In regard to the bearing of this instrument, it forms almost a semi-circle in which the cervix fits loosely and does not get directly pressed upon. It also makes a good support for a uterus that is not retroverted, but which rests on a pelvic floor. He has a case of bilateral laceration with eversion to the third degree, in which, after this pessary was applied to the extensive ulceration which was due to friction upon the pelvic floor, got well in three weeks. He has a case of fibroid tumor in which the uterus lay directly across the pelvis, the right horn on a level with the cervix, but which is held about straight by this pessary

modified by having one shoulder lifted, thus giving the patient back her former comfort. In regard to Dr. Martin's question—in the case of laceration just mentioned the levator vaginæ portion of the levator ani seem ruptured or relaxed, and leaves a large vaginal outlet, and yet a good sized instrument is retained. A large instrument is of course required for a large uterus or a relaxed vagina. You can change the position of the fulcrum by changing the curve of the arms. The sleigh pessary if reversed looks very much like this one with the handle cut off, but it would require a change in the curve of the arms and in the neck before it could be similarly used. This pessary comes the nearest being a perfect representation of one of Professor Fitch's instruments, which he devised before he became sick, but has not exhibited until to-night, and which is a modified Courty's. About the operation, he would like to say that his object in performing it is merely to raise the natural tissues, not to build an artificial support or barrier of fanciful shape; not to remove any more tissue than is absolutely necessary, but to draw the tissues together as much as is possible or desirable. What he has tried to do has been to find the directions of the muscular fibres and shorten them a little, and if they have been torn to reunite them as they were originally. At the same time he has always in mind the gathering up of the loosened connective tissue about the denudation, and sometimes cuts a little deep at certain points in order to cut into it and make a closer union of tissues.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, July 19, 1886.—E. J. DOERING, M. D., President, in the chair.

PROFESSOR D. A. K. STEELE read a paper on

THE DIFFERENTIAL DIAGNOSIS OF SCROTAL TUMORS.

For diagnostic or clinical purposes tumors of the scrotum may be divided into two general classes, viz.: reducible and irreducible—reducible tumors including all herniæ (except strangulated), varicocele, and congenital hydroceles. Irreducible tumors of the scrotum would include all tumors connected with the testicle, all hydroceles (except congenital), and strangulated hernia. Tumors of the tegumentary surface of the scrotum, such as inflammatory œdema, elephantiasis and epithelioma, are usually so characteristic in their history as to offer no special impediments to a correct diagnosis.

Scrotal hernia may be mistaken for:

1. Hydrocele of tunica vaginalis, cord, or encysted hydrocele.
2. Sarcocele of the testicle, simple, tuberculous, cystic or malignant.
3. Varicocele.
4. Hæmatocele.
5. Bubo.
6. Undescended testis.

In scrotal hernia, as a rule, the tumor is soft and doughy to the touch, light weight, smooth and regular, painless unless inflamed or strangulated, of sudden advent from above downwards, resonant on percussion, fills the inguinal canal,

has cough-impulse, gurgles, is of normal color, opaque, may exist on either side, the spermatic cord is concealed, does not fluctuate, aspiration is negative, bowels may be embarrassed. It can be reduced unless the hernia is strangulated or incarcerated.

1. (a) In hydrocele of the testicle the tumor is ovoid or pyriform, develops slowly from below upward, is firm, tense and elastic, fluctuates, is translucent, dull on percussion; is irreducible; spermatic cord is neither concealed or displaced; the inguinal canal is empty: bowels unaffected; aspiration reveals fluid.

(b) In hydrocele of the cord the difference is that the tumor is circumscribed, encysted, and sometimes reducible, situated usually near the epididymis, but returns after reduction irrespective of position.

(c) In congenital hydrocele the fluid disappears completely within the peritoneal cavity by compression of the tumor for a short time.

2. (a) In sarcocele of the testicle the tumor is usually hard and resistant, heavy, often nodular and irregular; painful; grows slowly; dull or flat on percussion. The inguinal canal is empty; no impulse on coughing; bowels unaffected; irreducible; no auscultatory sounds. Simple sarcocele is chronic orchitis. Both the epididymis and body of the gland are affected. The cord is usually thickened. Abscess of the organ may occur. It is caused usually by an injury followed by inflammatory deposits.

(b) Tubercular sarcocele is met with most frequently in early manhood, and may occur in any constitution; in the strong and robust as well as the weak and cachectic; and although often associated with tuberculization of other or-

gans, it is common enough to find the tuberculous nidus in the epididymis, not as a sequence of gonorrhœal inflammation or some slight injury followed by inflammatory infiltration—as was formerly believed—but as a coincident.* The progress is slow and insidious. The gland at first moderately enlarges with little or no pain, the hypertrophy being especially marked in the globus major. Presently the outline of the tumor becomes craggy or nodulated, and circles around the testicle from behind forward in the form of a crescent. After several months this adventitious tissue exceeds in size the testicle proper, and then it begins to soften at points, and one or more abscesses burst and discharge a thin shreddy pus. The vas deferens is greatly enlarged.

(c) In syphilitic sarcocele or gummata the history of the patient guides us in the diagnosis. Also we find that the body of the gland is usually the seat of the infiltration which takes place in the connective tissue between the tubuli seminiferi, the epididymis undergoing little if any enlargement. The cord and vas deferens are unaffected. There is little or no tenderness, and the peculiar sensation elicited by squeezing a healthy testicle is absent. The tunica albuginea is very greatly thickened. Hydrocele is a frequent complication, and tapping is often required to establish a diagnosis.

Cystic tumors of the testis closely resemble hydrocele, and differ chiefly in being opaque instead of translucent.

* The bacilli tuberculosis which were formerly probably disporting in the blood in a state of innocuous desuetude, now finding a fertile soil in the increased vascularization of the part, proceed to inhabit, multiply and take possession of the part to its ultimate destruction—just as other microbes have an affinity for the epiphysis of long bones where the blood current is sluggish.

Aspiration should be practiced before pronouncing positively upon their character.

Cancer of the testicle primarily invades the body of the gland, and almost invariably assumes the encephaloid form. Most observers doubt the existence of other varieties of malignant disease in this organ. The development of the disease is rapid. The patient has a sensation of weight, pain and dragging in the testis, the scrotum becomes distended, reddish or purplish, and the superficial veins are seen to be enlarged. The skin adheres to the gland, ulceration occurs, fungus protrudes, the inguinal glands are secondarily involved, and the patient by this time presents the characteristic cancerous cachexy.

3. In varicocele the tumor is knotty and irregular, like a bag of worms; bluish in color; most frequent upon the left side; increases in size upon the application of heat; develops gradually; is dull on percussion; fluctuation doubtful; spermatic cord not affected; inguinal canal not involved. No cough-impulse. It reduces spontaneously by any position that favors increased venous return, but returns immediately when the patient stands up, notwithstanding pressure at the ring. There is weight and dragging in the scrotum.

4. In hæmatocele the advent is sudden; usually traumatic in origin; grows from below up if spontaneous; fluctuates until coagulation occurs; is at first soft, and hard after coagula form. It is pyriform in shape; ecchymotic; irreducible; heavy; dull on percussion. The spermatic cord is unaffected, and the inguinal canal empty. There is often pallor and prostration from loss of blood. The bowels are unaffected.

5. Bubo is seldom mistaken for a scrotal tumor, and it is unnecessary to name differential points.

6. An *undescended testicle* is painful, and pressure upon it yields a peculiar sickening sensation. It is found wanting upon the side occupied by the tumor, and the scrotum is imperfectly developed upon the same side. It is sometimes mistaken for a bubonocele.

PROFESSOR CHRISTIAN FENGER agreed with Professor Steele that gonorrhœa in itself has nothing to do with tuberculosis; that it will not cause local tuberculosis of the epididymis any more than a trauma will cause local tuberculosis anywhere else in the body. When there is tuberculosis in the body somewhere, and consequently tubercle-bacilli in the current of the blood, then it may be that the local inflammation from gonorrhœal epididymitis, just as extravasation of the blood from a trauma, favors the accumulation of tubercle-bacilli in those places. Occasionally local tuberculosis will commence in an inflamed epididymis, but in a large number of these cases of scrotal tuberculosis there has really been no gonorrhœic epididymitis preceding.

PROFESSOR W. T. BELFIELD thought that too much stress had been laid upon the history as a means of differential diagnosis between syphilitic and other enlargements of the testicle; when affirmative, the history is a valuable factor; when negative, the diagnosis must be made without regard to the history. He mentioned a case where there was not only no history of syphilis, but also a nodular enlargement of the epididymis with but slight increase in the size of the testis —features usually characteristic of tuberculosis; yet the patient's age (31) argued so strongly against tuberculosis that it was determined to try syphilitic remedies before proposing excision; the effect was immediate and complete. Primary tuberculosis of the genital organs is evidently an infection

from within—hæmatogenous. The idea of local infection through intercourse with a subject of uterine or ovarian tuberculosis is of course fanciful; indeed, very many of these patients are boys just beyond puberty who rarely have had intercourse. The growth of the tubercle bacilli implies some local or general predisposition of the individual; one factor in this predisposition is evidently found in the conditions developed during the rapid growth of a part. Thus in childhood the epiphyses of long bones frequently afford a nidus for the growth of the parasite, while the rudimentary sexual organs are never affected primarily; but when with puberty the genital organs begin a rapid development, they are especially prone to become the site of the infection.

The tuberculous testicle should be excised, provided the prostate and seminal vesicles are apparently healthy, to remove the chances of further infection. While it is of course possible that there may be other and undiscovered foci of infection in various parts of the body—lymphatic glands, lungs or elsewhere—yet castration not only removes one, perhaps the only tuberculous nidus, but especially diminishes the danger of infection of the prostate and seminal vesicles—a necessarily fatal as well as agonizing affection. Tuberculosis of the lungs is sometimes arrested by proper climatic and hygienic conditions; but tuberculosis of the prostate never, so far as we know, by either hygienic, medical or surgical means.

DR. MCARTHUR had little to say in regard to the differential diagnosis. In regard to scrotal tumors there was a point upon which he would like to have light, viz.: whether Dr. Fenger would have the Society believe that tubercular testis is always the result of general tuberculosis; that is, that the tubercular bacilli are brought in the blood to the point where the local

inflammation occurs. He had privately asked Dr. Belfield if such were the case, what would be the advantage of an early removal? He had removed a testicle that happened to be a tubercular one. The man was 35 years of age, in apparently robust health, with no evidence of pulmonary or kidney affection. Dr. McArthur advised the removal of the testicle and performed the operation. On microscopic examination all the characteristics of tubercular testicle were found; within two months and a half the man died of acute tuberculosis.

PROFESSOR CHRISTIAN FENGER said that fifteen years ago nobody would have thought of extirpating a tuberculous testicle, because we knew that after the abscess has opened and discharged for a long time, such persons, if put under favorable circumstances, given cod-liver oil, sent to the seashore or country, will recover. So far as general tuberculosis resulting from a tuberculous testicle was concerned, only about 25 per centum of the patients, he thought, would become subject to general tuberculosis. In cases where the miliary tubercles were limited to the testicle, and all other parts of the body not as yet invaded, extirpation should be performed. It is a legitimate operation now, but has only become so within the last five years. It of course has to be limited to cases where, so far as we can find out, the tubercle is local in the epididymis. If the tuberculosis has invaded the vas deferens, it is difficult to see what good extirpation of the testicle could do except as a mere local measure. Another point in tuberculosis of the testicle makes us desire if possible to eradicate the local tuberculosis and thereby perhaps prevent the tuberculosis affecting the bladder. The patients are subject to most terrible suffering for a year or two before death when they get tuberculosis of the bladder. He did not think tuberculosis could be called local here except if it could be transmitted

by cohabitation with a woman having tubercles of the uterus, much in the same way as the microbes of gonorrhœa are transferred, and this mode of infection is not proved as yet. The tubercles in the epididymis must originate in the same way as local tuberculosis in the bones, by arresting any accumulation of tubercle bacilli already preëxisting in the general circulation. He did not think it possible that, in the strict sense of the word, any of these tubercles could be called local.

PROFESSOR G. C. PAOLI did not claim to be a specialist, but had seen many tumors of the testicles and scrotum. Tumors of the scrotum often arise in connection with diseases of the prostate glands, and with strictures. He had seen tumors of the testicle produced by affections of these organs. Another thing that gives trouble in practice is neuralgia of the testicles, which is very difficult to diagnose because the only symptom we have is the severe pain in the testicle. Another kind of tumor which has not been mentioned is scirrhous, and it is often difficult of diagnosis. Many that have been diagnosticated as scirrhous have been nothing but chronic orchitis. He once saw a testicle extirpated in the belief that it was scirrhous, but it proved to be a case of chronic inflammation of the testicle.

DR. J. L. GRAY read a paper on

LIGATION OF THE VERTEBRAL ARTERIES IN EPILEPSY.

He said: The ligation of the large vessels furnishing blood to the brain, for the specific purpose of relieving epilepsy, was first proposed in 1831, he believed by a Dr. Brown, of Calcutta, though, it has been stated, that prior to that date, the operation was performed successfully in this country by a surgeon upon his colored servant.

The operation for ligating the vertebral arteries to control

epileptic seizures was first advised by Dr. Wm. Alexander, of Liverpool.

The vertebral arteries, with their branches, furnish the blood supply of the medulla, pons, cerebellum and posterior third of the cerebrum, while the carotids furnish the blood supply for the anterior two-thirds of the cerebrum.

The relation between the sympathetic nerves and vertebral artery is very close indeed, and during its course through the transverse processes of the vertebræ, the artery is surrounded so closely by fibres of the sympathetic that they cannot be isolated without injury to its coats.

It seems to be generally admitted that the real seat of local disease in epilepsy is in the great group of centres in the medulla, more especially the vaso-motor centres and the regions closely related thereto, as, for example, the convulsive centre pointed out by Nothnagel.

The morbid excitations which arouse these centres to unhealthy action must come from regions outside the centres themselves; that is, the local disease may be present for years, and yet no fit occur, provided stimuli of sufficient intensity to rouse the centres to unhealthy action are prevented from reaching them.

In the vast majority of cases of epilepsy, the excitations which give rise to the attack start in some part of the digestive tract from the mouth down, or in the genito-urinary apparatus. These excitations are propagated through the sympathetic up into the medulla, there to excite to unhealthy action the abnormally irritable centres situated in its depths. Excitations may come from other regions of the body, as, for example, from the brain itself.

There are two theories which have been advocated in support of the benefit to be derived from ligating the vertebral

arteries for the relief of epilepsy. The one which was first proposed, is that held by Alexander. In brief, his theory is, that the operation is of benefit in modifying the circulation by diminishing the quantity of blood sent to the diseased and hyper-sensitive centres.

There are several objections to the adoption of this theory of the modification of the blood supply to the parts of the brain and central nervous system in which the disease is.

After ligation of both vertebrals, the part of the brain which had been supplied with blood by these arteries receives its blood supply from the carotids through the posterior communicating arteries of the circle of Willis. It is probable that, within a very short time, these communicating arteries dilate to such an extent as to allow of nearly as great a blood supply to the posterior third of the cerebrum as it received before the ligation of the arteries. It does not, as Alexander leads us to suppose, take months or years to have the collateral circulation established. If this were the case, we should observe those symptoms which accompany cerebral anæmia; but no evidence of anæmia is observable immediately after the operation.

If the benefit derived be due to diminishing the blood supply to the brain, the operation ought to prove of as great benefit in those cases where the excitation starts in the cortex and is propagated downward into the medulla as in those cases where the excitation arises in some region outside the central nervous system,—say in the digestive tract. But such is not the case. Thus far, it is believed, the operation has proved of no benefit whatever in those cases of epilepsy due to cortical disease of the brain, or where the attack is produced by strong emotional excitement of any kind.

The second theory is that proposed by Dr. Jewell: that

the operation is of benefit not merely in diminishing the blood supply to the parts in question, but in preventing morbid excitations from below reaching the medulla by way of the sympathetic, the fibres of which are included in the ligature around the vertebral.

The question as to the best place to ligate the artery is not an unimportant one. Dr. Alexander has operated at the sixth cervical vertebra.

If the artery is ligated at this point the communication between the middle and superior cervical ganglion of the sympathetic and the medulla is not severed. This allows morbid excitations to reach the medulla through the carotid and cavernous plexuses and the pneumogastrics.

The high operation, so called, between the axis and atlas, seems to be the preferable one if we wish to sever, in the most complete manner, communication through the sympathetic between the peripheral nervous system and the excitable centres in the medulla.

Dr. Alexander has reported twenty-one cases, three have been quite well for nearly a year, nine others so free from fits for such a period of time that it may be said a cure would result, and eight are improved to such an extent that the operation is justified were no better results ever obtained. One case, a little girl, died from septic poisoning.

In Chicago the operation has been performed seven times. One case cured, one improved, one no improvement, one died, and in the three other cases time enough has not elapsed since the operation to give any report.

The operation thus far has not in this country been performed a sufficient number of times to allow any sound conclusions to be drawn. The reports of Dr. Alexander are certainly encouraging, giving, as they do, the results in the

most intractable cases possible to imagine. From all the evidence at hand, we seem to be justified in drawing the following conclusions:

1. Ligation of the vertebral arteries should take its place as a recognized procedure in the treatment of certain cases of epilepsy.

2. The operation should be confined to those cases in which the exciting causes of the attacks come from some region outside the brain.

3. The arteries should be tied as high up as practicable, and the ligature should include all the fibres of the sympathetic accompanying the vessel.

4. Where the side of the brain which is first invaded by the disease can be determined, the artery of that side should be ligated.

5. Where the invasion of the disease is apparently bilateral, both vertebrals should be ligated.

6. This operation should not be done as a substitute, but as an aid to other forms of treatment for the relief or cure of epilepsy.

PROFESSOR D. R. BROWER, in opening the discussion, thanked Dr. Gray for his very able paper so full of interest and scientific importance, and said the case which he reported to the State Medical Society two years ago is now not quite so favorable. Indeed the child has practically relapsed into the same condition she was in at the time of the operation. For two or three months the change for the better in the child's condition was very manifest. In that case the ligation was made at one side. The intention was to have both arteries ligated, but such symptoms of collapse came on that it was deemed unwise to pursue the operation further, and there being so little benefit, the parents refused to have another operation. He thought with Dr. Gray

that enough is before us favorable to the operation to recommend it in cases where everything else fails, and he would be disposed to press the operation in those cases where there seems to be some special disorder of the circulation of the medulla. He thought the trouble about the treatment of epilepsy is that we have included under this name a great many diseases. He was sure there are a great many kinds of epilepsy, and he thought we do not know how to differentiate these different kinds, therefore our treatment must be to a great extent imperfect. There seem to be cases of epilepsy that are confined to the medulla. The history of some cases led him to suppose that the medulla is the seat of the disease, and in such cases it seems that the operation might prove a benefit. He did not believe that the circulation is established throughout the circle of Willis nearly so rapidly as Dr. Gray would have us believe. The circle of Willis is made up of minute arteries. In this particular case, there was a manifest and profound impression made upon the area of distribution of the vertebral artery for weeks, and he did not believe the collateral circulation was speedily established. He had no doubt that this operation would do good in some cases, just as any other profound impression will if made upon the nervous system; the cutting and destruction of the connections through the various plexuses is beneficial, so is any extensive counter irritation. A seton added to other treatment that was only partially successful sometimes caused a wonderfully better result to follow. He had a case under observation in which the removal of a cicatrix has resulted in wonderful improvement in the patient's condition, whether due to the extensive counter irritation produced by the operation or removal of cicatrix he did not know. He believed the operation justifiable in cases that resisted the ordinary treatment. He was an earnest advocate of

the surgical treatment of epilepsy, the best results he had seen in this disease having followed the use of the surgeon's knife. Quite a number of cases had come under his observation in which the cause of the affection seemed to be in the ovarian region, and surgical interference was followed by better results than from treatment by medicine. He thought the treatment of epilepsy by pills and powders one of the most unsatisfactory things that can be undertaken, and the proportion of cases benefited by drugs exceedingly small.

PROFESSOR CHRISTIAN FENGER asked as to Alexander's operation,whether he ligated at once on both sides. The first time Professor Fenger ligated an artery the question presented itself if it would not be dangerous to ligate them both at the same time. He ligated the arteries at Dr. Jewell's request and consequently did not take responsibility for ligating both at once. That question of course presents itself, and is truly interesting to see that the double simultaneous ligation of the vertebral arteries has never given rise to local brain symptoms. On the other hand, when we ligate a common carotid in case of epilepsy, we always have in mind the danger which may exist of emòllition, from local cerebral enemia, and possibly death in a certain number of cases. The operation on the vertebral arteries is far preferable to the ligation of the carotid, if it should prove that there is no danger by the ligature of the vessels both at one time. As to the manner of operating: Alexander operated down low before the artery enters the vertebral canal, but according to Dr. Jewell's view it is necessary to ligate the vertebral arteries high up. He looked over the books of surgery and found that the method of ligating between the occiput and the atlas, and between the latter and the epistrofous, had been done on the cadaver, but not on living subjects. The reason why the vertebral artery had been ligated in former

times was either for aneurism or wounds. There are very few instances on record, and the wounds and aneurisms were very dangerous cases, and Fischer in the German surgery of Billroth and Lurcke, published in 1880, said that the ligature of the vertebral artery between the occiput and atlas and between the atlas and the axis is practically impossible. On the cadaver it can be done as well between the occiput and atlas as the atlas and axis, but the operation is much easier between the atlas and axis. To ligate between the occiput and the atlas Professor Fenger considers almost practically impossible on the living subject. The ligature between the atlas and the axis can be done. He knew that Andrews ligated there, but the cases on record are few. There has not as yet been any injury to the artery, but if we should tear the artery so that we could not get hold of vessel enough to ligate above and below, we would have much the same condition as in a traumatic aneurism of the artery. Warren, of Boston, who wrote his Memoirs of Surgery twenty years ago, gives one case of wounded artery that got well by compression, by filling up the wound, but in most cases we know how little effective the plugging of an arterial wound is. Of thirty-four wounds of the vertebral artery only five recovered. Four of these were treated by plugging or local applications; in one only the ligature between occiput and atlas was performed by him in 1881 and the case published in *Gaillard's Journal*, July 1882. He was afraid when taking up the vertebral artery of the possibility of wounding it before it is ligated.

DR. C. W. PURDY asked Dr. Gray whether the operation was followed by diabetes, as would be expected from an operation of that kind. It was pointed out in 1849 by Claude Bernard, that traumatic injuries to this tract of the brain gives rise to diabetes in numerous instances, and since that time the

course of the diabetic influence has been pretty satisfactorily mapped out. It is said to leave the brain by vaso-motor filaments with the vertebral arteries going as far as the third cervical ganglion, passing along with and surrounding the subclavian arteries, and reaching the upper and middle dorsal. A section of these nerves at any place until we reach the upper dorsal ganglion causes diabetes. Strange to say, section of the splanchnics does not cause diabetes, but we would expect to find traumatic diabetes as a result of this operation. He thought that diabetes as a result of the operation would be only temporary.

DR. HAROLD N. MOYER thanked Dr. Gray for the manner in which he had presented the subject, and especially for the indications which he laid down for the operation. Dr. Moyer had uniformly bad results from the treatment of epilepsy by any operative procedure. He had never recommended an operation for trephining that was followed by good results. He had once recommended the removal of the ovaries, and it was done, but was not followed by a good result. In one case coming under his observation a man was trephined three times; the first time it was followed by a cessation of the epilepsy for eighteen months; the second, for a year; the last by no cessation. He had found medication quite as bad; he had tried the bromides according to Hammond's method, without good results. During the last two years he had treated about one hundred cases of epilepsy and in only one case had there been any real benefit. He thought he should recommend this operation, and hoped it might not be as serious as one would be led to suppose from the deep seat of the artery, and the extensive destruction of tissue that must be made to reach it.

PROFESSOR D. R. BROWER said that at the discussion which

followed his paper at Springfield, a gentleman present announced that this operation was first performed in this country sixty years ago by an army surgeon, stationed in St. Louis, upon a negro man who was his servant. The man recovered, but the case was never published. If this is so, an American surgeon was the first to essay the operation.

DR. J. L. GRAY, in closing the discussion, said that he had not had an opportunity, except in one case, to examine the urine, and in that there was a slight quantity of sugar for about a week. From all the literature he was able to examine the first operation was performed in 1831 by Dr. Brown.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, August 2, 1886.—THE PRESIDENT, E. J. DOERING, M. D., in the chair.

DR. L. L. MCARTHUR, read a paper on

DIAGNOSIS AND TREATMENT OF HEPATIC ABSCESS,

which appears in another part of the *Journal and Examiner*.

DR. FRANK BILLINGS upon invitation said he thought that probably he had had less experience with living patients with abscess of the liver than any one present, and consequently had less that is practical to say about it. While in Vienna he saw a great number of autopsies of abscesses of the liver. Several cases occurred in the wards, but no diagnosis of abscess was made, the patients suffering from what appeared to be intermittent fever, and usually a diagnosis of that kind was made. A curious thing to him was the fact that a great number of these abscesses were found in new-born children. In vienna, one often sees in the dead-house abscesses which were the re-

sult of badly attended cord. Pus had formed in the vein and the inflammation spread upward, finally producing abscess in the liver.

PROFESSOR H. A. JOHNSON said, that while listening to this paper, a somewhat unusual case was recalled to his mind which occurred at the county hospital when it was located on eighteenth street. It was a case of abscess in the left lobe of the liver which had communicated, evidently some time before death, with the left lung, and was discharged through the bronchus; when the case came into the hospital it presented all the signs of empyema and the complication of the abscess with the liver was only discovered in the dead-house. Another case occurred to him in which there was abscess in the right lobe of the liver discharging through the right lung. The patient recovered, but five or six years afterwards a recurrence of the abscess took place, and it discharged into the vena cava, producing instant death. Post-mortem revealed the cavity of the abscess communicating with the vena cava. Both of these cases seemed to him to be somewhat out of the ordinary history of abscesses of the liver.

DR. J. J. M. ANGEAR said, that in all cases that he had seen the discharge had a fearful odor, and he began to think that if the pus did not have that odor, he should have doubts of its being an abscess of the liver.

DR. J. A. ROBISON said that he had just had in the county hospital a case of abscess of the liver in which the diagnosis was made only after death. The remark of Dr. Billings, that abscess of the liver is often diagnosticated as malaria, led him to speak of it. The case was that of a woman who had been ill for several months. When he first saw her in the hospital about a month ago, she was greatly emaciated, jaundiced, and complaining a great deal

of pain in the hypogastric region. The liver was not enlarged, her temperature ranged from 100° F. to 102° F., she had chills every few days, and it was supposed they were due to malaria. She finally died of exhaustion.

There was no diarrhœa, but there was great tenderness over the hypogastric region, together with general jaundice. There was also a cachectic appearance which led him to believe there might be catarrhal inflammation of the duodenum, which would account for the jaundice. But upon post-mortem examination it was found to be a case of multiple abscesses of the liver, with purulent inflammation of the gall ducts. He had in the same hospital another case in which nearly all the signs, of which Dr. McArthur has spoken here, occurred. The patient was a woman about 40 years of age, in whom the area of liver-dulness was greatly increased. Her temperature was 100° F., she was extremely jaundiced, and when she first came into the hospital he heard the friction sound as mentioned in the paper, but that has again disappeared. He believed the case would prove to be one of large abscess of the liver.

DR. JOHN BARTLETT said that at the time of the Mexican War, many of the soldiers returned affected with chronic diarrhœa. In seven of these cases which came under his observation, enormous abscesses of the liver followed. They were not opened, but were particularly examined in the dead-room, some of them containing at least a gallon of pus. As a general rule the patients lived for months. About a year ago he was called to see a case in consultation. The man had been trodden upon in a crowd and received a slight injury about the epigastrium. Inflammation followed and abscess of the liver was diagnosticated, but owing to a difference of

opinion among the consultants no effort was made even to aspirate. After death, which followed in due course, multiple abscesses were found, one as large as a small cocoanut, another as large as an orange, and fifty other smaller ones. He mentioned this to prove how hopeless would have been an attempt to improve the condition of this man by aspiration. He saw another case of some interest: The man was shot and some weeks afterward died. The body was opened and a piece of wadding and the bullet were found in the liver. The abscess was about as large as two fists and opened into the vena porta. In another case he was called in consultation to see a man who appeared to have an affection of the liver. Both of the attending physicians thought it was a case of abscess. Presently he had symptoms indicating that there was some difficulty in the respiratory organs, and later, but in time to act if they had been more prompt, they discovered that there was a retropharyngeal abscess. He immediately expressed the opinion that the abscess in the liver had opened into the anterior mediastinum. He deemed it inexpedient to open this abscess without having other instruments than they had with them. They went to get others and when they returned they were advised at the gate that man had been taken with a difficulty of breathing which simulated croup and had immediately expired. Upon examination they found that he had been drowned, as it were, by the pus from the bursting of this large abscess.

DR. H. N. MOYER asked Dr. MacArthur if in the literature on the subject he had seen anything in reference to the presence of peptone in the urine in these cases? Jaffey has laid down indications of diagnostic value when this substance is formed. He thought the symptoms might lead to the de-

velopment of this substance in the urine, and that it might be of some diagnostic value, in suspected cases of abscess of the liver.

DR. MACARTHUR said, in closing the discussion, he was interested to learn of another source of abscess of the liver to be by infection from the umbilical cord as related by Dr. Billings. Dr. Johnson's case of abscess of the liver breaking into the left pleura and left lung is the only one of which he had known. Rupture into the vena cava is also rare. To Dr. Angear he would say that in the cases he saw the discharge was odorless, and he had emphasized that fact in the paper because the books all state that as a rule it possesses a very offensive odor, and is usually of a purulent character. In two of the cases which he saw it was of a chocolate color being mixed with blood and liver-tissue. Dr. Robison had spoken of a case as markedly jaundiced. This is set down as an exceedingly rare complication in abscess of the liver. He said that in that case the liver was found, post-mortem, to contain multiple abscesses. He desired to ask if the cause was found? Dr. Robison replied that none was found. He also wished to ask Dr. Bartlett if his case proved to be a case of abscess of liver with a mediastinal opening? Dr. Bartlett said that they presumed it to be hepatic, but no post-mortem was allowed. As to peptone, he had seen no literature on the subject in connection with the liver. In those cases in which he used the hypodermic needle to make a diagnosis, three in number, two were operated on and recovered, the third was treated by the expectant treatment and died. No careful search was made for the puncture of the needle in the abscess of

the liver. After the first two cases he became bold in the use of the hypodermic needle and punctured for the fourth time in one case before he obtained purulent matter.

DR. SCOTT HELM read a paper entitled

A SUBCUTANEOUS METHOD OF THE TREATMENT OF BUBOES, WITH EXHIBITION OF THE INJECTING INSTRUMENT.

This paper appears in full in another part of the *Journal and Examiner*.

His method consists in injecting the suppurating gland, after the pus has been withdrawn, a solution of carbolic acid to wash out the cavity, and then injecting and allowing to remain an emulsion of iodol in pure oleic acid. The injecting instrument consists of a barrel holding two drams, which is mounted on either side by two rings for the fore and middle fingers, and a ring in the end of the piston for the thumb. Three needles, two different sizes of aspirator needles, and one a canula with trocar. To these is attached the center joint, in which is a stopcock, the opposite extremity of which is attached by a smooth joint to the barrel. In twenty-three cases the treatment was successful in all but the nineteenth, this patient having gone on a protracted spree following the operation. The advantages of the operation on that when there are two or more suppurating buboes in the same chain of lymphatics, the second or third appear further away from the initial one; by placing the first glandular abscess in a perfectly aseptic condition you prevent the inflammations of neighboring glands; secondly, there is no cicatrix remaining.

DR. J. ZEISLER said that if conservative surgery has any place he thinks it is in the treatment of buboes, and he thinks the final bad result of treating buboes by section might be

avoided by carrying out the idea of Dr. Helm. It is a good idea to inject iodol, as it may be regarded as a specific against the venereal poisons, and there can be hardly a doubt that the suppuration is due generally to the poisons. He would like to know if Dr. MacArthur had found it sufficient to introduce this iodol emulsion more than once?

PROFESSOR G. C. PAOLI said that in the treatment of buboes of course the sooner we get out the pus the better, but those who have had experience with the treatment of buboes know that there are cases in which, in spite of aspirations and subcutaneous injections, there is still a morbid process going on which produces mischief and ulceration of the tissues. He never uses carbolic acid, but he has used a watery solution of permanganate of potash one-half grain to six ounces, injecting it into the cavity. But we all know that we have cases of buboes which, in spite of all the skill of the physician, produce great suffering. He had seen a case where the femoral artery had to be ligated. In temperate persons we have very tedious buboes. Again, where mercury has been used too freely there are often mischievous buboes. Very difficult cases are those in business men who are busy, active, and produce more congestion of the abscesses by their activity. But if we can get the patient to go to bed and rest we succeed better in our treatment. However he thinks favorably of the subcutaneous method.

DR. FRANK asked Dr. Helm how many of these buboes were due to gonorrhœa and how many to chancres or chancroids, if any?

DR. H. N. PIERCE said he had had an opportunity of seeing Dr. Agnew, Jr., four years ago, experiment with the subcutaneous treatment of buboes. He first evacuated the pus by use

of the canula, then injected an antiseptic solution, washing it out and afterward applying a compress bandage. The buboes generally went on from bad to worse, and he tried the same method over again but with no success, and finally he had to cut down upon them and treat them by the old method.

DR. HELM, in closing the discussion, said that he had made, in any case, only one injection, and the time that elapsed before the patient was discharged had been from eight to fourteen days. In reply to Dr. Feder he would say that these buboes had been aspirated as early as possible, as soon as there was fluctuation. All the pus was removed and the cavity injected with a like quantity of the oleic acid emulsion of iodoform. He had no case in which there had been a return of the disease in the same chain of glands. He had one case in which there was a bubo appeared some two weeks afterward in the opposite groin, evidently due to gonorrhœa. In the second case, and the last one, which had only occurred a few days ago and was not reported, the buboes were caused by gonorrhœa; all the others were due to chancroids.

IN MEMORIAM.

Since our last meeting it had pleased Divine Providence to call from our midst Dr. Robert C. Hamill, and the Committee on Necrology submitted the following resolutions:

Resolved, that this Society has learned with profound sorrow of the death of Dr. Hamill, one of the earlier as well as one of the most earnest and efficient members of this Society.

Resolved, that in the death of Dr. Hamill this Society has lost a member typical of the true gentleman in the kindness of his manner, in the great force and energy of his character; typical of the good citizen in his ceaseless efforts to advance the interests of institutions tending to ameliorate the condition of the sick and unfortunate; typical of the patriot in his un-

ceasing efforts to aid and cherish the disabled soldiery of his country; typical of the wise counsellor in the soundness of his judgments; typical of the true physician in his earnest cultivation of medical knowledge and in his philanthropic practice of the healing art; typical of the faithful Christian in his never flagging zeal in all good works.

Resolved, that the Society extend to the bereaved widow of the deceased, in her great loss, sympathy and condolence.

JOHN BARTLETT,
CHAS. GILMAN SMITH,
H. A. JOHNSON,
Committee on Necrology.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, June 18, 1886.

I.—JAGGARD. *A Gravid Uterus with Adnexa, Corresponding to the Sixth Month.*

II.—PARKES. *Discussion of the Paper on Uterine Fibroids Treated by the Fluid Extract of Ergot.*

III.—BYFORD. *A Study of the Causes and Treatment of Pelvic Hæmatoceles.*

The PRESIDENT, DANIEL T. NELSON, M. D., in the chair.

I.—PROFESSOR W. W. JAGGARD exhibited

A GRAVID UTERUS WITH ADNEXA, CORRESPONDING TO THE SIXTH MONTH.

The material was placed at his disposal through the conrtesy of Dr. H. H. Frothingham, one of the resident obstetricians of Cook County Hospital.

The patient, 30 years old, multipara, came under obser-

vation May 17, 1886. While sitting on a chair in the ward she began to show signs of asphyxia. She was immediately put to bed, but died within five minutes of the beginning of the attack.

Autopsy made forty-eight hours after death.

External Appearances.—Some venous hypostasis over dependent portions.

Lungs.—Engorged with blood in lower lobes. Œdematous throughout.

Heart.—Left ventricle partially, but not fully contracted, contained fluid blood and small clot. Left auricle contained small amount of clotted blood. Right side of heart contained clotted blood in considerable quantity; clots all dark in color.

Valves.—Normal in thickness and competent. Endocardium—Deep wine color; smooth.

Myocardium.—Soft, friable. Few spots of emphysema under visceral layer of the pericardium. Left coronary artery contained a clot at distal side of first branch. Intima of artery stained deep wine color.

Abdomen.—Peritoneum apparently normal. Gravid uterus with fundus extending to the level of the umbilicus. Large corpus luteum in left ovary. Upon opening the uterus a male fœtus, in the embryonal position, was found. Placenta separated from the uterus by its own weight and without any effort to detach it.

Intestines apparently normal.

Liver enlarged, friable, deeply congested. Spleen slightly enlarged, and very friable. Kidneys congested; acute pyelitis in each pelvis. Bladder normal.

Brain.—Some congestion of envelopes, and at posterior

margin of *tentorium cerebelli* two small, round, firm tumors intimately attached to the *dura mater* and pressing upon cerebellum at posterior internal angle of each hemisphere. Tumors are each about the size of a filbert, upon section presenting a grayish firm surface at periphery, and a disintegrated portion at the center. ' Cerebellum.—Soft and pale throughout, *arbor vitæ* appearance almost entirely disappeared. No trace of hæmorrhage or embolism discovered. Ventricles of cerebrum contained little fluid. The *intima* of the vertebral and basilar arteries presented the same appearance as that of the coronary.

(Tumors referred for microscopical examination.)

Professor Jaggard desired to call attention to the condition of the cervix. The cervix is a funnel shaped object, the neck of which measures 4 cm. in length; thickness of wall, 2 cm. The upper, expanded portion measures 1.5 cm. in length; thickness of the wall, 1.5 cm. The mucous membrane lining this funnel-shaped cervical canal differs in its macroscopic characters from the mucous membrane lining the uterine cavity. The cavity of the cervix is filled with a white, coagulated secretion. The insertion of the membranes forms a circle around the upper expanded portion of the cervix, about 7 cm. in diameter, corresponding to the site of several large veins in the muscular substance of the uterus, and the insertion of the peritoneum externally. At this point, the muscular substance of the uterine wall becomes thinner. The average thickness of the muscular wall of the uterus is 1 cm.; that of the cervix 1.5 to 2 cm. Total length of the uterus, 17 cm.

The macroscopical characters of the preparation seemed to sustain the position assumed by Bandl, Küstner and Carl

Braun, recently opposed with considerable force by M. Hofmeier. Dr. John Bartlett, a distinguished Fellow of the Society, read a paper entitled **The Cervix Uteri Before, During and After Labour*, July 14, 1873, before the Chicago Medical Society (several years prior to the appearance of Bandl's classical monograph upon the same subject) from which the following extract is made:

"Early in pregnancy the neck of the uterus is called upon to supply its quota to the enlarging body. Speaking somewhat figuratively, as ring after ring of tissue is demanded from the upper part of the cervix, the preparatory development in the remaining portion is such that the length of the neck is not apparently impaired, so that what remains of it as late as two weeks before labour has been mistaken for the entire infra and supra vaginal cervix, whilst the loss by the continual transfer from the upper portions of the neck to the uterine walls has entirely escaped notice. That circle of the neck which corresponds at the time of an examination to the limits of its expansion, is regarded by writers as the os internum. The os internum is, of course, as before labor, above the attachment of the vagina, and, near term, far removed from the examining finger. The apparent constriction taken for it is simply that point in the cervical walls marking the constantly decreasing line of demarcation between the expanded and yet unexpanded portions of the neck."

II.—PROFESSOR A. REEVES JACKSON, in beginning the discussion on Dr. Parkes' paper on the treatment of uterine fibroids by ergot, said: I was very much pleased to hear the reading of Dr. Parkes' paper. I commenced using ergot in the treatment of fibroids in June, 1873. I had used it in

* The Chicago Medical Journal, October, 1873.

eight cases at the time Dr. Byford read his paper based on 103 observations gathered from various persons in this country. I was extremely pleased with the result; two of the patients seemed to be practically cured—that is to say, while there could be distinguished some remaining enlargement of the uterus, the symptoms that were referable to the presence of the tumor were entirely removed, and the patients suffered no inconvenience from the bulk of the uterus. In nearly every case there was improvement. I continued to use it for several years, but have not used it lately—I do not know why. The cases that have been published by those who use it extensively have all shown favorable results except those of Martin, of Berlin, and perhaps two or three others. There seems to be no reason to doubt that ergot, whether given hypodermically, by the mouth or rectum, does have some controlling influence on the development of uterine myomata, checking the growth or lessening the size of the tumor. Indeed, there is reason to believe that it is one of the very best means of dealing with these tumors. I have used the remedy in perhaps thirty cases. I do not know just what the ratio of success was. In about three-fourths of these cases there was benefit. Sometimes the good effect did not consist in diminution of the size of the neoplasm, but from improvement in the general health of the patient. I was very glad to hear of the almost phenomenal success that followed the practice of Dr. Parkes. In some of the cases he relates the patients were, however, evidently in great jeopardy from the sloughing of the mass, and the difficulty of getting it away before septicæmic symptom came on. There is great danger, unquestionably, in having a sloughing fibroid retained within the uterus. The treatment by ergot should be accompanied by dilation of the cervix, so that the mass, when separated

from the wall of the uterus, may escape readily. This would lessen that danger. In some cases death has occurred very soon after the stinking discharge appears. Nevertheless, the treatment by ergot is very much less dangerous than any of our surgical methods of dealing with uterine fibroids.

THE PRESIDENT: Have you kept records of any of your cases?

PROFESSOR JACKSON: Yes, and I shall be glad, if the interest continues, to report them in detail. I kept accurate notes of the first cases so far as I had charge of the patients. Some of them occurred in the Woman's Hospital, and the patients would go away, and we did not always have means of ascertaining the final results. But of others, occurring in private practice, I can give accurate details.

DR. H. T. BYFORD: I made the assertion that there was no danger of a sloughing of the tumor when it is not situated so that it can be expelled by way of the vagina. This was based on the fact that, unless submucous, it cannot be firmly enough compressed. I have reported a case of fibroid tumor of the vagina,* whose thick pedicle was gradually cut through by daily tightening a fine wire about it; when the wire had cut through the pedicle, it was found to have reattached itself and retained its vitality, showing that tumors of this nature require very little nourishment to keep them from undergoing sloughing. The cases on record are very few in which subperitoneal growths have sloughed from the use of ergot.

PROFESSOR W. W. JAGGARD said, with reference to priority in the use of ergot in the treatment of uterine fibroids, that Hildebrandt, of Königsberg, had published a paper in 1872, in which he recommended the drug. The growth of the neo-

* Chicago Medical Journal and Examiner, August, 1885.

plasm was limited by diminished access of blood, and, in some cases, it was actually expelled from the uterine cavity. Hildebrandt's recommendation was the revival of an old practice. Dr. Wm. H. Byford's paper—Address on Obstetrics—was read in Philadelphia in 1875. During the interval of three years, several papers were written extolling the action of ergot in the treatment of uterine fibroids, both in the diminution of the quantity of blood flowing to the tumor, and also in actively causing its expulsion from the uterus.

DR. HENRY T. BYFORD said: Dr. Jaggard fails to take into consideration the different ways in which ergot acts. It acts first, in a radical way by expelling the tumor, as in the submucous variety; second, in a gradual way by causing atrophy and absorption, as in the interstitial variety; third, in a partial way, by arresting the tumor's growth and activity, as the subserous ones; fourth, in a palliative way by relieving the symptoms, as in cases of large tumors, near the menopause. Schroeder in the last edition of his *Krankheiten der Weiblichen Geschlechtsorgane*, gives Dr. Wm. H. Byford credit for suggesting the use of ergot for the expulsion of the tumor. There is no longer any reason to doubt that ergot is the surest and safest cure for all but the very exceptional cases of uterine fibro-myomata. A tolerance of moderate doses is quickly established both by the organs through which it is absorbed and by the general system. Sloughing is almost never produced except in the submucous variety, when it need not be dangerous. For several years past, with one or two exceptions, I have not given ergot in any other way than by the rectum. I use 5 to 8 grains of Squibb's extract of ergot twice a day and continue it for two or three years, with favorable results. I remember one case in which the tumor extended almost to the umbilicus when I first saw her, five years ago. It was an

irregular, nodulated tumor, mostly subperitoneal, with projections larger than the fist, filling up the pelvis, and to a great extent the false pelvis also, and sometimes caused excruciating pain by its pressure. The patient had repeatedly bled through six and eight weeks, and must have lost one hundred pounds. Tampons were required to save her life. I never saw paler mucous membranes in a living being. It was a very much worse case than many which I continually find cited in medical literature, in which hysterectomy is considered necessary. The patient begged to have the tumor removed. She could not take the ergot for any length of time either by rectum or mouth; but after a while she tolerated 5-grain rectal suppositories, and has passed the menopause. The tumor, having lost its activity, has become considerably smaller; while she, having regained her hundred pounds, has become considerably larger. I have a case which had been treated for a year with all of the most approved remedies, except ergot. When I first saw the patient, two years ago, she weighed eighty-three pounds; she had a nervous chill and almost fainted when I first entered the room, because I was a stranger. She had not slept for weeks except under the influence of narcotics, and had symptoms of acute tuberculosis. She was in the habit of bleeding steadily from three to six weeks, and was being so rapidly destroyed by the loss of blood that I at first had to use the tampon. She was put upon eight grains of Squibb's fluid extract of ergot per rectum and tincture of iron by the mouth. Her health improved rapidly and the hæmorrhages progressively diminished. Her lungs were recently examined by Dr. H. A. Johnson, who found the remains of old trouble, but no tendency to unfavorable changes. Her cough, which had lasted so long, has entirely left her. She now takes the ergot a part of the time only. Her menses last four days, are natural in

quantity and quality, and are followed every two or three months by a watery discharge of a faint pinkish tinge. She cannot feel the tumor now, although a projection the size of a child's head was formerly felt by her between the umbilicus and left groin. It might be said of this case that it was also a very proper one for operation, and one in which ergot, if harmful to the system, would have done injury. I have similarly relieved other cases nearly as bad, and cannot help believing that, when treated early, judiciously and persistently by ergot, fibroid tumors of the uterous will show a mortality of 1 or 2 per centum instead of 10 per centum as at present; that hysterectomy for fibroids, with its mortality of 20 to 40 per centum, will eventually become an interesting relic, and the removal of the appendages a precious rarity.

DR E. W. SAWYER said: There is one point that was not alluded to by the reader of the essay, and that has not been spoken of in the discussion. The fact that the point has been proved in practice shows that it is worthy of attention. That ergot will cause atrophy of a uterine fibroid, causing a detachment by ulceration and expulsion, is a well-established fact. When the fibroid is submucous, or nearer to the mucosa of the uterus than to its peritoneal suface, I have no doubt that that process can be continued and completed with safety. But let us suppose a tumor very close to the peritoneal surface; this process of atrophy takes place, the peritoneum ulcerates through, and the life of the woman is jeopardized. Such a condition occurred in a patient seen by the President of this Society, and it was shown that had the patient lived long enough the fibroid might have been thrown off through the abdominal parietes. This patient died of peritonitis. The large and partially detached fibroid was in a sac containing

a great quantity of pus. This sac had ruptured, occasioning the peritonitis.

PROFESSOR F. E. WAXHAM said: I would simply add my testimony as to the value of ergot in the treatment of submucous fibroids, by citing a case: A woman, 45 years old, came to me some time ago complaining of copious hæmorrhages at her menstrual periods, and upon careful examination an enlarged uterus was found, which nearly reached the umbilicus. The diagnosis of fibroid of the uterus was made. This woman was placed upon ergot, combined with opium, to control the pain, which she took for several weeks. Between the second and third months after commencing to take the ergot, I was called to her in great haste and found her apparently in labor, the uterine contractions quite regular and very severe; a partially dilated os and the tumor presenting. This tumor was expelled after two or three hours. It was nearly as large as a child's head at time of birth. The patient made a complete recovery.

THE PRESIDENT: In what state was the tumor?

PROFESSOR WAXHAM: I can hardly say it was softened, but it was fleshy in character, and some pus upon it as though it had suppurated. It was somewhat offensive, I remember. I attended her for some weeks subsequently; there was some febrile reaction, but no serious trouble followed.

THE PRESIDENT said: I have reported a case in which a tumor was thrown off without sepsis. I have had since quite a series of cases in which tumors have been thrown off; some have been absorbed and there has been a various history, which I hope to make the subject of a special paper, and would like the assistance of others in making up a

history of these cases. I think we are specially favored in having with us Dr. Wm. H. Byford, who has had such extended experience in these cases.

PROFESSOR W. H. BYFORD, in closing the discussion, said: Mr. President, you are right in supposing that I feel great interest in this subject. I have made it a study for a long time. Perhaps as good a way as any to introduce my views on this subject to the Society, will be to go back to the commencement of my own researches in this matter. In 1872, as Dr. Jaggard has said, Hildebrandt commenced a series of experiments for checking the hæmorrhages connected with fibroid tumors of the uterus, by giving hypodermic injections of the extract of ergot, and succeeded in a great many instances in suppressing the hæmorrhage and relieving the patient from the inconvenient symptoms. During these experiments he also ascertained that the tumor would sometimes disappear. I think his statistics were not large, and that he only reported a very few, perhaps three or four, cases in which the tumors disappeared by atrophy during the time he treated them in this way. In 1874 I was elected to the chairmanship of the Section of Obstetrics in the American Medical Association, and as these experiments of Hildebrandt had attracted considerable attention, I thought it would be a good time to make some investigations as to the value of his facts. I commenced correspondence over a large portion of the United States and Europe, but especially communicated with my friends in this part of the country, among whom were my immediate associates in this city, who had been engaged in using hypodermic injections of ergotine according to the method of Hildebrandt, once in two or three days. All of them bore testimony as

to the efficacy of that kind of treatment, and as to the fact that these tumors could be made to disappear in a great many instances by atrophy, and in a great many more the symptoms could be relieved so that the patient was rendered comfortable, the presence of the tumor giving them but little inconvenience. Some of the gentlemen with whom I had correspondence had been using the ergot in different ways, giving it by mouth, giving it *per rectum*, and injecting it into the tumor itself and by various other methods. I noticed one fact in my own practice and that of my friends, which was that the more frequently the ergot was given the more powerful its action was. In giving it two or three times a week hypodermically by the Hildebrandt method, there is very little distress produced by it; but the tumor may gradually disappear and the symptoms get better. I collected 103 cases from different parts of the country, and in all of them the attention of the practitioner was directed to the point of causing the disappearance of the tumor by atrophy. During the time I was making these investigations cases of fibroid tumors occurred in the practice of my friends, who consulted me. One was a remarkable instance in the practice of Dr. Merriam. I remember the particulars. The patient was a little Irish woman who had a tumor almost large enough to reach to the umbilicus. He commenced the use of ergot in September, 1874, twenty drops of Squibb's fluid extract three times a day. It produced so much contraction of the uterus and so much pain as to alarm the patient and the doctor himself; he thought these pains ought to be suppressed, and as a consequence he would intermit the use of ergot, give anodynes to stop the pain and get relief from the sufferings of the patient, but would recur to ergot as soon as his fears had sub-

sided. In January, 1875, he directed her to recommence the ergot and increase the amount. He gave her, I remember very well, twenty-five drops of Squibb's fluid extract three times a day. In March, which was about two months from the time he began giving her ergot in that way, the patient commenced having expulsive pains very much like labor, and not long after that, probably about March 20th, there commenced to issue from the vagina a putrid liquid that was very offensive and which contained small pieces of organized substance. He became alarmed and entirely withdrew the ergot, supposing he was doing mischief, but the death of the tumor had been produced and as a consequence the uterus continued its action to throw off this foreign body, until April 5, 1875, he was summoned in great haste to see his patient. I was also summoned. Upon arriving at the house, which he did before me, he found the tumor expelled, part of it laid in the vagina and part between the limbs of the patient, a protruding mass almost the size of a child's head. It was not expelled in a lump, but was broken in pieces that would represent that size. The patient at that time had septic fever, with increased temperature and increased frequency of pulse, etc. The Doctor and I both felt uneasy about her, but she very soon rallied and in a short time was well, and since has given birth to a child.

That was my first observation as to expulsion of tumors of that kind. It started a train of thought in my mind and led me to think about increasing the ergot beyond the amount that had usually been given for producing atrophy. In the same year, July, 1875, I commenced giving it with the view of expelling a tumor. I gave my patient at first fifteen-drop doses of Squibb's fluid extract three times a day, and increased it until the patient was taking a teaspoonful of ergot three

times a day. On August 15th, about five weeks after I commenced using it, the tumor was broken up and expelled from the vagina. It was expelled by pieces, the first piece about as large as my thumb, of a grayish kind of substance that smelled very badly. The action continued; I was somewhat alarmed and gave the patient anodynes, but the uterus had already commenced to act on the tumor and expelled it, as it would any foreign body. In December of the same year I had an opportunity of repeating the experiment, and the case terminated in the course of six weeks, by the same method of administering the ergot. In 1876, on returning from the world's exposition at Philadelphia, I was requested to call at Coldwater, Mich., to see two patients, one with cancer and one with a tumor. I found one of these patients with a tumor as large as my head, the measurement of the cavity being fully six inches. I told her I believed the tumor could be expelled if she was willing to go through the process. I felt uneasy, however, to leave her to use such medicine by herself, and tried to teach her how she should proceed when the expulsion should take place. She took the ergot three months without much effect, except that occasionally she would have a paroxysm of pain; after that, however, the pains became so very severe that she could not take the ergot much of time. But, brave and intelligent as she was, she repeatedly resumed it, and finally the tumor commenced to come away. It came away in about five weeks from the time the first symptoms of expulsion occurred. She wrote me a description of the method of expulsion. She said at first small lumps made their appearance and passed out of the vagina; after the second day they became larger, and on the third and fourth days they seemed large enough to fill up the vagina. With her scissors she cut off pieces of it and pulled

at it to assist its removal. She labored at it two or three days until it was all expelled. In about three weeks thereafter she came to see me, and the uterus had shrunk back to near its natural size. She has since had the menopause, and is now in good health. She sent me at that time a quart cup full of this expelled fibrous substance.

Another case occurred in the western part of this state, under the care of Dr. Crandall, of Sterling. The patient came, by his directions, to see me, and I found a tumor of considerable dimensions and advised her to take ergot. She went home and in about fifteen or twenty days got her work done up, as she expressed it, took three doses of thirty drops of Squibb's fluid extract of ergot, and started up such a process of expulsion that, notwithstanding the efforts of her physician to stop it, the pains went on to the expulsion of the tumor, which was completed in about three weeks.

Dr. Wm. Fox, of Milwaukee, three years ago sent me a report of another similar case. In summing up these observations, I have known personally of twenty-six cases of expulsion of the tumor in this way. With reference to the dangers connected with the expulsion, I would say that only one out of these twenty-six cases proved fatal. They all had septicæmia to some extent, but as soon as the mass of dead tumor was removed the patient commenced to recover and got well. Some of the patients had no assistance. This one patient in whom it proved fatal lived in Monmouth. It occurred about six years ago. She was a lady who, like all other foolish women, distrusted her home physicians, and she came here supposing she would find better treatment. I advised her to take ergot, and in about three months the pains commenced that caused the tumor to be expelled. She came here with the lower part of the tumor hanging from the vagina and uterus while the

upper portion was clinging to the cavity in which the whole of it had been lodged. She was then laboring under a high fever. The smell was terrible. She came to the Tremont House and it was several hours before I could see her. When I arrived it was a very simple matter to enucleate it, and I removed it in a few minutes. But she had already received a fatal poisoning from the retention of the dead tumor. This is the only case I have known to prove fatal. I do not get a history from other gentlemen of any more unfavorable results. They all tell me they are frightened at the symptoms, and they are afraid the patients are going to die, but they do not die. When the mass is taken away and the vagina washed out the symptoms disappear. Since thinking of this matter and observing the effects of this remedy I have thought that I could come to definite conclusions as to the conditions under which we might predict the expulsive effects of ergot by the appearance of the tumor. You know that it is not a very common thing to find a case in which there is a single tumor in the fibrous tissue of the uterus. More frequently these tumors are complex. Quite a number of nuclei of formation; we often see in one uterus four or five, sometimes fifty different points of solidification. Now a single, or even a double tumor, located within the circle of the fibrous arch of the uterus near the mucous membrane, is the kind that I think may almost certainly be expelled. If you find a case of symmetrical development, where the uterus seems near its normal shape, no matter how big, so it is normal in shape, oval, or globular, without any large projections standing out in various directions, feeling somewhat elastic to the touch, and attended with hæmorrhage, you may be pretty sure you can expel the tumor by commencing with small doses of ergot and increasing them in size, and then when the pains begin, not to stop

them. The presence of severe pains frightens a great many men from finishing what they have begun. If I were to try to explain this operation I would say when ergot is given in this way, after a while the tumor becomes starved, the supply is cut off so there is not blood enough to support it, and very soon it dies in consequence of this strangling process. When it dies there is, at the same time, gangrene of the mucous membrane covering it; then it becomes a foreign body and you cannot keep the uterus from expelling it. The expulsion is a consequence of this starvation and killing process in the tumor. As to the action of ergot in tumors that are not sub-mucous, of course I know that tumors not sub-mucous cannot be expelled. There is what is called the interstitial tumor, developed in the central stratum of the fibrous walls of the uterus; these are the proper subjects of the Hildebrandt process for atrophization. Then with reference to the effect of ergot upon subperitoneal tumors; I have often been asked the question, Can ergot affect these subperitoneal tumors? I think they are frequently starved out and cured; when not too near the peritoneum there is no danger of their becoming detached and putrid in the peritoneal cavity, because the action is from the tumor. In the submucous tumor the contractions are all towards it and none from it. There is one circumstance to be taken in connection with these tumors and the action of ergot upon them, that has not been sufficiently considered. A large proportion of them growing to any considerable size contract attachments to the peritoneal membrane, the intestines, omentum, or the walls of the abdomen, and in making this attachment they get a new supply of blood, which makes the life of the tumor more tenacious than it would be otherwise. This very process of adhesion to the walls of the abdomen is, more than any other, the cause of their great size

and the change from a fibrous to a fibro-cystic tumor. We need not expect such tumors to be affected by ergot. There are a good many other things that interfere with the successful use of ergot, of which I cannot now speak. I am grateful to my western associates who have assisted me by facts and experiments on this subject. If you go to the eastern part of the United States they will tell you that ergot is of no use in the treatment of fibrous tumors, or it is too dangerous; the patient cannot live under the pains of expulsion, etc.; but if these same gentlemen had a patient in labor they would urge the pains instead of stopping them. Most physicians who do not believe in the efficacy of ergot use Hildebrandt's method pretty much altogether, which produces tonic contraction of the fibres of the uterus, but does not go to the extent of causing expulsive pains. Then, again, there is too great apprehension on the part of the profession generally of the dangerous toxæmia from ergot. I do not know whether the history we have of the poisonous influence of ergot in producing nervous diseases, gangrene, and so on, is true; whether the observations that led to that teaching were correct at one time or not, but I know that after the use of ergot persistently for two or three years in the same case, I have never seen any evil influence produced by it, unless it is in cases where the violent action of the uterus would be regarded as such. I have purposely avoided saying anything about the *modus operandi* of ergot in causing contractions in the uterine fibres, because that is now sufficiently understood by the profession. But, Mr. President, I feel that I have occupied too much of the valuable time of the society already, and will say no more.

DR. H. T. BYFORD read a paper entitled

III.—A STUDY OF THE CAUSE AND TREATMENT OF PELVIC HÆMATOCELES.

The author cited the case of a non-suppurating, retro-uterine hæmatocele of six months' standing, which he evacuated *per vaginam* March 18, 1886, and then treated with antiseptic irrigations. She was up and about the house in eleven days. As the odor and discharge were still causing discomfort, the doctor, influenced by the advice of Apostoli and Doléris, curetted the cavity. He found no more blood or débris, but started up a mild attack of local peritonitis, which delayed instead of hastening the cure. The patient left the hospital in a little less than a month after the cessation of all discharge. A small lump of induration extending from the abscess opening to the right sacro-uterine ligament was all that was left of the tumor.

The following résumé of interesting points in the case is given:

1. The length of time from the occurrence of the hæmatocele to the time of operation, about six months.

2. The method of opening the cavity, viz.: by first tearing the vaginal wall, and afterwards the sac wall.

3. The absence of fluid in the tumor.

4. The breaking up of the mass with the finger without an attempt at thorough curetting or removal of the entire contents.

5. The complete disintegration and discharge of all bloody substance in thirteen days.

6. The absence of high temperature—102° F. having never been reached.

7. The small amount of anodyne required—one dose (except the two doses to relieve the irritation from subsequent unnecessary curetting).

8. The toleration of strong antiseptic solutions. It was necessary to weaken them on account of their effect upon the vagina.

9. The absence of the usual amount of odor in such decomposing masses.

10. The large quantity of food taken throughout.

11. The absence of any kind of sickness from the beginning until the cavity was curetted.

12. The curetting of the cavity on the thirteenth day delayed her recovery, producing the only serious symptoms that were noticed.

13. Notwithstanding a setback of ten days, caused by the curetting, she was well enough to go home inside of a month and dispense with treatment.

14. The attack came on after a miscarriage.

P. F. Mundé reports two new cases of hæmatoma successfully operated upon three and six weeks, respectively, after their occurrence, both large, and resulting from or after abortions. (*N. Y. Medicinische Presse*, Vol. 1, No. 1, Dec., 1885.)

Five other cases were briefly related, four extra-peritoneal hæmatomas and one large retro-uterine hæmatocele, which had come under the writer's observation during the past two years, and which were successfully treated on the expectant plan. He was unable to find justification in any text-book for having operated in the absence of any threatening symptoms until he procured the last edition of Billroth & Lücke's "*Frauenkrankheiten*" and Schroeder's text-book (both of 1886). He cautions against taking the advice of Bandl, to operate after the first subsequent menstrual period, or that of Apostoli and Doléris, to operate immediately by the galvano-puncture wherever and whenever found. Operations at such times are connected with what are designated as immediate dangers, viz.

"a recurrence of shock, hæmorrhage, or (if hæmostatic tampons be used) of inflammation; or of septicæmia followed by inflammation, if antiseptic injections of sufficient strength be used."

The dangers of the expectant treatment are mostly remote, and are such as "suppuration, septicæmia, perforation, and prolonged pressure upon, and displacement of, surrounding organs, with their results, viz.: the aggravation and perpetuation of pre-existing pelvic disease, or the originating of new ones."

While recognizing the necessity for evacuation within the first three or four weeks in certain exceptional cases, he would, as a rule, delay operating long enough to avoid the immediate dangers, yet not long enough to incur the remote dangers of delay. The patient must invariably be kept in bed and the tumor should be left alone until the primary acute symptoms subside. If the tumor remain hard and diminish in size, no matter how slowly, it should be let alone as long as the symptoms do not become worse. If the tumor remain stationary and boggy to the feel, and the symptoms begin, after a few weeks, to increase in severity, it must be operated upon; or if the symptoms remain without improvement, while the tumor shows no signs of being absorbed, it is better not to wait for serious symptoms, but operate in the subacute stage, or when the symptoms have subsided as much as they will. There is a certain class of cases, like the first one reported, in which the acute symptoms subside, the patient recovers considerable strength, but the tumor remains elastic, or boggy, and almost stationary, and interferes with her usefulness. If the patient cannot, from adverse circumstances, or does not wish to make an invalid of herself for the many months of quiet and careful-

ness requisite for safe absorption of the organized clot, she should have the benefit of an operation at a time when it is almost devoid of danger.

DR. BYFORD would not select the method of operating recommended by Apostoli and Doléris because two sittings would be required for a complete operation, and because the use of the currette through so small an opening as would be justifiable by galvano-puncture is not devoid of danger. He prefers puncturing and tearing with a dilator, first the vaginal and then the cyst wall, to Zweifel's method of incising, on account of the less liability to trouble from hæmorrhage. He also advises the attack of such retrouterine hæmatoceles as are accompanied by obliteration of the Douglas cul-de-sac by puncture and dilation per rectum, when possible. The difficulty would be but little greater than the dilatation of the fistulous opening of a pelvic abscess.

Though curetting is condemned as dangerous, but a breaking up of all solid material by the finger, and the trusting to copious, strong, antiseptic irrigations (which can be endured much stronger if the abscess walls are not scraped) is recommended. Hydrarg. bin-iodide $\frac{1}{30000}$, or bi-chloride $\frac{1}{20000}$, or carbolic acid 1½ to 2 per cent. twice or three times a day, as necessary. Instead of a drainage-tube being used, the finger may be passed through the opening daily in order to dilate and insure free discharge. On account of diagnostic difficulties an aspirating needle should precede the use of the knife.

The discussion of Dr. Byford's paper was deferred until the next regular meeting.

W. W. JAGGARD, M. D., Editor.

2330 Indiana Ave., August 15, 1885.

BOOK REVIEWS.

PUERPERAL CONVALESCENCE AND THE DISEASES OF THE PUERPERAL PERIOD. *By* JOSEPH KUCHER, M.D. *12mo, pp. 311. New York:* J. H. VAIL & Co. *1886.*

Dr. Kucher has attempted in this book "to concisely reflect the views on the management of childbed, and upon the origin and treatment of the puerperal diseases, as accepted and in practice at the Vienna lying-in hospital." The purpose of the work is obviously excellent. The doctrines of the Vienna school have for a considerable period of time exercised an important influence upon the theory and practice of obstetrics in the United States, gradually replacing the English and French teachings of a former generation.

No adequate exposition of the puerperal diseases from the Vienna point of view has before appeared in English, and the lack of such a treatise has been keenly felt by every scientific practitioner of midwifery who is not familiar with the German language. The expectations of the general reader upon taking up Dr. Kucher's little book are high, and he is disposed to resent any imperfections in the performance of such an important undertaking. Then, too, Dr. Kucher has a large class of critics, composed of medical men, who have studied in Vienna and who ought to know the teachings of that school. Dr. Kucher's task is accordingly one of very unusual difficulty.

A careful reading of the book, however, must convince the most uncharitable critic that the design has been most admirably executed. More than this, Dr. Kucher adds value to the book by the free discussion of the relative values of the

various methods of treatment. He writes as an authority upon the subject, and justly,—supported as he is by his experience in the Vienna lying-in hospital, a period of over four years, implying an observation of nearly 14,000 cases—and in private practice in New York.

In the brief space at our command, it is possible merely to call attention to a few of the topics considered.

In the chapter on "Mastitis," fissures and abrasions of the nipple are correctly mentioned as "the channels by which the infecting matter gains entrance to the breast and causes inflammation." While retention and impaired flow of milk, as ætiological factors, are relegated to their proper places among *a priori* conclusions and preconceived notions.

In the chapter on "Lacerations of the Perineum," the Vienna method of prevention is concisely sketched. Episiotomy—a little operation comparatively unknown in the United States—is recommended when laceration is otherwise unavoidable. In none of the more ambitious American or English text-books on midwifery has the Vienna method of perineal protection received such a clear description. It is a fact, an undeniable fact, that this distressing acccident seldom occurs in the Vienna lying-in hospital, while its relative frequency of occurrence in the United States is one of the *opprobria* of the art of midwifery. The accident is entirely avoidable in the very large majority of cases, and Dr. Kucher has clearly pointed out the way by which this object may be attained.

We notice, with regret, the absence of any suggestions with reference to the prevention of laceration of the cervix, also an accident of comparatively frequent occurrence in our country, and due, in many cases, to meddlesome mid-

wifery, *i. e.*, the premature rupture of the bag of waters, the pernicious habit of digital dilatation, and the application of the forceps before complete dilatation of the cervix.

In the chapter on "Eclampsia," the theory of acute renal insufficiency is ably sustained. Pilocarpine and blood-letting are rightly relegated to the domain of obsolete measures.

About one-half of the book is devoted to the consideration of puerperal fever. The views of Semmelweiss are ably defended. All cases of puerperal fever arise "from the absorption of decomposing organic matter from lesions of the genital tract;" the septic element may be introduced from without (hetero-infection), or originated in the generative organs (auto-infection.) The note on "The Relation of the Atmosphere to Puerperal Fever" is of especial interest to the American practitioner, familiarized as he is with such vague, fanciful terms as "nosocomial malaria," "hospitalism," and the like. Dr. Kucher is very definitely of the opinion that atmospheric and telluric influences play a very insignificant role in the ætiology of puerperal fever. His views upon the subject do not differ essentially from the conclusions of Credé (*Gesunde und Kranke Wöchnerinnen, Leipzig, 1886.*) The doctrine of childbed fever, thus imperfectly indicated, is not attractive to the general obstetrician. As Dr. Kucher remarks: "Semmelweiss's theory is a blessing to the patient, but quite another thing to the physician. The old obstetricians were helpless in the prevention of puerperal fever, but they never had a sleepless night from remorse. There is nothing but the hard evidences of fact, *la brutalite des faits*, which forces us to accept this theory."

Dr. Kucher's little book, regarded as a whole, is, in our opinion, unquestionably the best treatise on the subject in the English language. It is one of the few books that are "to be chewed and digested;" that is, "to be read wholly, and with diligence and attention." W. W. J.

INTERNATIONAL MEDICAL CONGRESS.

CIRCULAR NO. 2.

NINTH INTERNATIONAL MEDICAL CONGRESS.

The Ninth International Medical Congress will assemble in the city of Washington, the Capital of the United States, on Monday, September 5, 1887, at 12 o'clock noon, in accordance with the arrangements made at Copenhagen in August, 1884.

PATRONS.

The President of the United States.—THE HON. GROVER CLEVELAND.

The Secretary of State.—THE HON. THOMAS F. BAYARD.

The President of the Senate of the United States.—THE HON. JOHN SHERMAN.

The Speaker of the House of Representatives of the United States.—THE HON. JOHN G. CARLISLE.

PROPOSED OFFICERS OF THE CONGRESS.

President.—Nathan S. Davis, M. D., LL. D., Professor of the Principles and Practice of Medicine and of Clinical Medicine, Chicago Medical College, and of Mercy Hospital, Chicago, Illinois.

Vice-Presidents, as far as appointed.—Professor J. McCall Anderson, M. D., Glasgow, Scotland; Mr. Thomas Annandale, Professor of Clinical Surgery, Edinburgh University, Edinburgh, Scotland; Professor Dujardin-Beaumetz, M. D., Paris, France; Cuthbert Hilton Golding Bird, M. D., Professor of Physiology, Guy's Hospital, London, England; Professor Carl Braun, M. D., Vienna, Austria; William Brodie, M. D., Emeritus Professor of Principles and Practice of Medicine and Clinical Medicine, Detroit College of Medicine, Detroit, Michigan; W. W. Dawson, M. D., Professor of Surgery and Clinical Surgery, Medical College of Ohio, Cincinnati, Ohio; Thomas M. Dolan, M. D., Halifax, England; F. R. Frazer, M. D., Professor of Materia Medica and Therapeutics, University of Edinburgh, Edinburgh, Scotland; J. A. Grant, M. D., Ottawa, Canada; J. A. S. Grant, M. D., Cairo, Egypt; A. L. S. Gusserow, M. D., Professor of Obstetrics, Berlin, Prussia; Dr. Hans Ritter von Hebra, Vienna, Austria; Dr. E. Klein, London, England; Mons. Le Baron H. Larrey, Paris, France; Sir William MacCormac, Surgeon St. Thomas' Hospital, London, England; Mr. George B. Macleod, Professor of Surgery, Glasgow, Scotland; John S. McGrew, M. D., Honolulu, Hawaiian Islands; E. M. Moore, M. D., LL. D., Rochester, New York; Professor Von Monseil, Bonn, Prussia; Dr. Müller, Berlin, Prussia; William Murrell, M. D., London, England; Charles D. F. Phillips, M. D., M. R. C. S., late Lecturer on Materia Medica and Therapeutics, Westminster Hospital, London, England; Richard Quain, M. D., Professor of Anatomy, London, England; Tobias G. Richardson, M. D.,

Professor of General and Clinical Surgery, Medical Department, Tulane University, New Orleans, Louisiana; Mons. P. Ricord, Paris, France; Professor John Burdon Sanderson, M. D., London, England; Lewis A. Sayre, M. D., Professor of Orthopædic and Clinical Surgery, Bellevue Hospital Medical College, New York; Dr. Mariano Semmola, Professor of Experimental Therapeutics, University of Naples, Italy; Dr. Leopold Servais, Antwerp, Belgium; J. M. Toner, M. D., Washington, D. C.; Dr. P. G. Unna, Hamburgh, Germany; Professor F. Winckel, Dresden, Saxony; The President of the American Medical Association; The Surgeon-General of the United States Army; The Surgeon-General of the United States Navy.

Secretary-General.—John B. Hamilton, M.D., Supervising Surgeon-General of the United States Marine Hospital Service; Professor of Surgery, Georgetown University, D. C.; Professor of Surgery, Chicago Policlinic.

Treasurer.—E. S. F. Arnold, M.D., M.R.C.S., Newport, Rhode Island.

Chairman of the Finance Committee.—Richard J. Dunglison, M.D., Philadelphia, Pennsylvania.

Chairman of the Executive Committee.—Henry H. Smith, M.D., LL.D., Emeritus Professor of Surgery in the University of Pennsylvania, Philadelphia, Pennsylvania.

Chairman of the Committee of Arrangements.—A. Y. P. Garnett, M.D., Emeritus Professor of Clinical Medicine, Columbia University, Washington, D. C.

Associate Secretaries of the Congress.—William B. Atkinson, M.D., Philadelphia, Pennsylvania; G. B. Harrison, M.D., Washington, D. C.

The Congress will consist of such members of the Regular Medical Profession as shall have registered and taken out their ticket of admission, and of such other Scientific men as the Executive Committee of the Congress shall deem it desirable to admit. The books for the Registration of Members will be open from 9 A. M. to 5 P. M., on Thursday, September 1, 1887, and on each subsequent day during the Session, under the charge of the "*Reception Committee.*" Any member desiring to anticipate this Registration, can apply by letter to the Secretary General and forward his dues, with his address in full, when a receipt will be returned.

The dues of Membership for residents of the United States will be Ten dollars ($10.00). There will be no dues for members residing in other countries. Each member will be entitled to receive a copy of the "*Transactions*" of the Congress, when published by the Executive Committee.

The General Sessions of the Congress will be devoted to the transaction of business and Addresses and Communications of general scientific interest, by members appointed by the Executive Committee. A printed "Programme" of the Sessions will be presented to each member on registering. A printed "Order of Business" for each day will also be issued.

The work of the various Sections will be directed by the President of the Section, and the order will be published in a daily Programme for each Section. Questions and topics that have been agreed on for discussion in the Sections, shall be introduced by members previously designated by the titular officers of each Section. Members who shall have been ap-

pointed to open discussions, shall present to the Secretaries of the Section, in advance, statements of the conclusions which they have formed as a basis for the debate.

Brief abstracts of Papers to be read in the Sections shall be forwarded to the Secretaries of the proper Section on or before *April 30, 1887*. These abstracts shall be treated as confidential communications, and shall not be published before the meeting of the Congress. Papers relating to topics not included in the list of subjects proposed by the Officers of the Sections, may be accepted after April 30, 1887, and any member wishing to introduce a topic not on the regular lists of subjects for discussion, shall give notice of the same to the Secretary-General, at least twenty-one days before the opening of the Congress. The titular officers of each Section shall decide as to the acceptance of such proposed communications, and the time for their presentation. No communication shall be received which has been already published or read before a Society.

The official languages of the Congress shall be English, French and German. Each paper or address shall be printed in the "*Transactions*" in the language in which it was presented. Preliminary abstracts of papers and addresses shall also be printed in the language in which each is to be delivered. All discussions shall be printed in English.

The officers of the Congress and the officers of the Sections, including all foreign officers, will be nominated to the Congress by the Executive Committee, at the opening of the first session. A partial list of the officers to be nominated (except the members of Council of the different Sections, the list of whom is at present imperfect), is offered herewith.

The Executive Committee cordially invites members of the regular medical profession, and men eminent in the sciences collateral to medicine, in all countries, to participate, in person or by papers, in the work of this great humanitarian assembly. Communications relating to appointments for papers to be read in the Congress should be addressed to Dr. John B. Hamilton, Secretary-General of the Ninth International Medical Congress, Washington, District of Columbia. All questions or communications connected with the business of the Executive Committee should be addressed to Dr. Henry H. Smith, Chairman of the Executive Committee of the Ninth International Medical Congress, Philadelphia, Pennsylvania. Gentlemen named in any position in the Congress are requested to notify the Chairman of the Executive Committee, as soon as practicable, of any error in the name, title or address in this circular.

Ladies in attendance with members of the Congress, and those invited by the "Reception Committee," may attend the General Sessions of the Congress when introduced by a member. They will also be invited to attend the Social Receptions. The Executive Committee reserves the right to invite distinguished persons to any or all the meetings of the Congress. The attendance of Medical Students and others interested in the work of the various Sections or in the general addresses delivered in the Congress, will be permitted, on the recommendation of the Secretary-General or the officers of a Section, on their taking out from the Registration Committee a general ticket of admission, fee one dollar ($1.00); but such persons cannot take part in the proceedings.

All communications and questions relating to the special business of any Section, must be addressed to the President or one of the Secretaries of that Section. As many details of the Congress and numerous appointments of officers are yet to be completed, other circulars will be issued from time to time, as circumstances may demand.

The following is the list, as at present completed:

EXECUTIVE COMMITTEE OF THE CONGRESS.—Henry H. Smith, M.D., LL.D., *Chairman;* N. S. Davis, M.D., LL.D.; John B. Hamilton, M. D.; E. S. F. Arnold, M.D.; Richard J. Dunglison, M.D., *Secretary;* Abram B. Arnold, M.D.; William T. Briggs, M.D.; DeLaskie Miller, M.D., Ph.D.; James F. Harrison, M.D.; F. H. Terrill, M.D.; William H. Pancoast, M.D.; John H. Callender, M.D.; Alonzo B. Palmer, M.D., LL.D.; J. Lewis Smith, M.D.; E. Williams, M.D.; S. J. Jones, M.D., LL.D.; William H. Daly, M.D.; A. R. Robinson, M.D.; Joseph Jones, M.D.; Albert L. Gihon, M.D.; John P. Gray, M.D., LL.D.; Jonathan Taft, M.D.; Frederick S. Dennis, M.D.; A. Y. P. Garnett, M. D.

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General Medicine.—Abram B. Arnold, M.D., Professor of Clinical Medicine, College of Physicians and Surgeons, Baltimore, Maryland.

General Surgery.—William T. Briggs, M.D., Professor of Surgery, University of Nashville, Nashville, Tennessee.

Military and Naval Surgery and Medicine.—Henry H. Smith, M.D., LL.D., Emeritus Professor of Surgery, University of Pennsylvania, and formerly Surgeon-General of Pennsylvania, Philadelphia, Pennsylvania.

Obstetrics.—DeLaskie Miller, M.D., Ph.D., Professor of Obstetrics, Rush Medical College, Chicago, Illinois.

Gynæcology.—James F. Harrison, M. D., Professor of Obstetrics, etc., University of Virginia, Charlottesville, Virginia.

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Pathology.—Alonzo B. Palmer, M. D., LL. D., Professor of Pathology, University of Michigan, Ann Arbor, Michigan.

Diseases of Children.—J. Lewis Smith, M. D., Professor of the Diseases of Children, Bellevue Hospital Medical College, New York, New York.

Ophthalmology.—E. Williams, M. D., Professor of Ophthalmology, Miami Medical College, Cincinnati, Ohio.

Otology.—S. J. Jones, M. D., LL. D., Professor of Ophthalmology and Otology, Chicago Medical College, Chicago, Illinois.

Laryngology.—William H. Daly, M. D., Pittsburgh, Pennsylvania.

Dermatology and Syphilis.—A. R. Robinson, M. D., Professor of Dermatology, New York Polyclinic, and of Histology and Pathological Anatomy, Woman's Medical College of the New York Infirmary, New York, New York.

Public and International Hygiene.—Joseph Jones, M. D., Professor of

Chemistry and Clinical Medicine, Tulane University; ex-President Board of Health, New Orleans, Louisiana.

Medical Climatology and Demography.—Albert L. Gihon, M. D., Medical Director United States Navy.

Psychological Medicine and Nervous Diseases.—John P. Gray, M. D., LL. D., Professor of Psychological Medicine and Medical Jurisprudence, Bellevue Hospital Medical College, Utica, New York.

Dental and Oral Surgery.—Jonathan Taft, M. D., Professor of Dental and Oral Surgery, University of Michigan, Ann Arbor, Michigan, Cincinnati, Ohio.

VICE-PRESIDENTS OF SECTIONS.

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General Surgery.—Prof. Filanus, Holland; Moses Gunn, M. D., Illinois; J. W. Hamilton, M. D., Ohio; W. H. Hingston, M. D. Canada; Jas. M. Holloway, M. D., Kentucky; J. C. Hutchison, M. D., New York; N. S. Lincoln, M. D., District of Columbia; Donald MacLean, M. D., Michigan; Donald Macrea, M. D., Iowa; M. Storrs, M. D., Connecticut.

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Therapeutics and Materia Medica.—Henry M. Field, M. D., New Hampshire; Albert Fricke, M. D., Pennsylvania; George Gray, M. D., Ireland.

Anatomy.—C. W. Kelly, M. D., Kentucky; Samuel Logan, M. D., Louisiana.

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EXTRACT.

From an editorial in the *British Medical Journal*, of August 14th, relative to the meeting of the British Medical Association at Brighton, the following is taken: The proceedings were greatly heightened in interest by the attendance of a delegation from the International Medical Congress, to be held in America, at Washington, in September, 1887, to present an invitation to attend the Congress to the members of the British Medical association. There have been some considerable internal dissensions among the organizers of this Congress, but it was very generally felt that this ought not to and could not prevent the invitation from America from receiving a cordial acceptance. This invitation, which was

made at once in the name of the International Medical Congress by its President-elect, and of the American Medical Association by some of its principal officers, was received with that sincere and affectionate cordiality which both the purport of the message and the sources from which it came already assured for it in advance. It lost nothing of dignity or of interest in the weighty and grave words of Dr. N. S. Davis, one of the oldest and most respected members of the profession in America, and one who holds very much the same relation to the American profession as Sir Charles Hastings long held to the profession in Great Britain. Dr. Davis was practically the founder of the American Medical Association, and is its most respected spokesman. The English profession may be sure that they will receive in America a welcome of unlimited hospitality, and of boundless kindness and brotherly affection. They will see there a great country and a great profession, which has sprung up and developed with a rapidity and to an extent which the world has never seen during the life time of many who were present to hear the invitation. In our own country, Paget, Lister, Mac Cormac; In France Charcot, Trèlat; and in all the countries of Europe, leading representatives of science have accepted invitations to be enrolled on the list of Vice Presidents. In America, the President of the United States, and the great officers of State, have signified their acceptance of the offices of Patrons of the meeting; and official recognition of the highest kind, such as is naturally due to a great gathering of medical men from all parts of the world, will be accorded to those who accept the invitation to attend the first great International Medical Congress which has ever been held in the United States.

ABSTRACT.

CURABLE HYPERTROPHIC CERVICAL PACHYMENINGITIS. By Dr. Edgard Hertz. (*Archives Generales de Medecine, Juin*, 1886.)

Hertz briefly considers the somewhat meagre literature of the subject, and then reports two cases coming under his own observation. In addition, he details two cases reported by O. Berger (*Deut. Med. Wochenschrift*, 1878), one by Fere (*Progres Medical*, 1883), one by Joffroy (*Arch. Gen. de Med.*, 1876), and one by Burtin (*These de Paris*, 1878). From these observations he feels justified in formulating the following conclusions:

1. That the disease is caused in the majority of instances by exposure to cold, living in damp dwellings and prolonged exposure to currents of air.

2. That an analysis of the symptoms confirms the division of the disease into three periods: pain, paralysis and atrophy. For the latter we may advantageously substitute the term period of trophic disturbance, as in fact a veritable atrophy never exists, the muscles preserving the normal volume.

3. That there is a great excess in the quantity of urea excreted. In one case amounting to 76 grammes per litre. Improvement is accompanied by a fall in the proportions of urea in the urine.

4. That the disturbances of the sexual functions follow the same course, at first true satyriasis exists, followed by absolute but temporary impotency.

5. That the course of the disease justifies the title of the paper. Cervical pachymeningitis *is curable*, rarely in the first period of the disease, but during the period of paralysis and trophic changes.

6. That from the observations of Joffroy, Féré and Burtin, sensible amelioration of the symptoms may be expected in about eighteen months. Prognosis is, however, unfavorable when the disease affects the lower extremities; when the bladder and rectum are affected, or when the deformity of *main en griffe* exists, with wasting of the muscles of the shoulder and the flexors of the fore-arm.

7. That the prognosis should be favorable in the largest number of cases, and that recovery does not take place progressively, but by sudden improvements followed by temporary relapses which necessitate continuous surveillance and moderate and prudent interference.

8. That the treatment in the painful period should consist in the employment of anodynes, chloral or morphine subcutaneously, and counter-irritants should be freely applied to the cervical region, particularly scarifications and the actual cautery. Prolonged hot baths are of great service. Electricity exercises a favorable influence over the trophic disturbances. The salicylate of soda is of great value in many cases, as the disease is frequently of rheumatic origin.

HAROLD N. MAYER.